The Builder.

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The Dwelling-house Question—Condition of London—St. Jude's.

OUR allies on the other side of the Channel, or at all events some of them, are arriving at the conclusion that their system of house-building, piling flat upon flat, and accumulating under the same roof large numbers of persons of widely different positions in society, is very inferior to the mode pursued in England, where each house is built to accommodate a single family, — though, in the majority of cases, we must add, for the information of our French friends, it is afterwards made to contain several. In a volume published in Paris last year by M. Felix Abate, architect, "*Sur la Nécessité d'une double Réforme de l'Architecture Domestique en France, spécialement appliqués à la Classe moyenne et ouvrière*," the author,—who desires, first, to change the arrangement of houses, and, secondly, to lessen the cost of lodging,—enumerates the various inconveniences attendant on the French system,—the loss through making one apartment the passage-way to another, the lack of conveniences, the want of light and ventilation, the absence of tranquillity and privacy. With these he contrasts our small houses, built each for a single family, or so arranged (as he maintains, oddly enough) that each room on a floor communicates with the staircase, so that the house may be divided into various little lodgings. Certainly, if a house is to be occupied by more than one family, the French and Scotch mode of construction is infinitely preferable to the English; giving, as it does, to each tenant his own door of entrance, and to each flat the various conveniences required by a family. Nevertheless, we are far from advocating the superiority of the French house-upon-house system: we simply desire that in smaller houses, the appropriation of which may be foreseen, proper arrangements should be made to secure the privacy,—the domestic sanctity—so much prized by English people, and so valuable in the maintenance of the national character. M. Abate, we need scarcely add, desires, then, to get rid of the practice of erecting immense piles containing dwellings one upon another, and to induce the substitution of houses built on the English system. Within the walls of Paris, where ground (land would be too large a term to be used) fetches anything that is asked for it,—has a value almost fabulous,—a change in the present system cannot be expected. When the fortifications are cleared away, municipal restrictions removed, and the extension of the city encouraged, M. Abate will have a better chance of being listened to as to his first reform.

His second object, that of cheapening the construction of dwellings, he seeks to effect by the employment of iron and wood in the erection of carcasses or skeletons of a certain class of buildings, used in such a way that the walls would play but a secondary part, and be reduced to a minimum thickness. The material to enclose the building would be formed in panels of a certain size, and be secured in a framework of iron or wood. For this enclosing material he proposes, amongst other things, brick masses formed of a brick with a hollow on the inner side, to be filled with sawdust, or pounded charcoal and plaster; the object being, by the interposition of a bad conductor of heat, to protect the interior from the alternations of heat and cold, to which, in consequence of the thinness of the walls, it would otherwise be exposed. Roofs of a novel construction, and iron ceilings, also form part of his project. Expensive foundations would not be required; and he further proposes, what (like other features of the plan) has been suggested in England before, that the various parts and fittings of houses should be reduced to a determined and constant form, producible by machinery and organization in large quantities, at the lowest possible cost. He would thus bring about a great saving in the cost of building, and so solve an important problem. "Never," says the writer, "was the necessity for a reform in domestic architecture so strongly felt. The dominant want of the immense population of Paris [and London] is to be freed from the miseries that result from the insufficiency, the bad condition, and the high and constantly augmenting cost of lodging. Every one knows the cause of this deplorable condition of things. Carelessness, abuses, and bad administration for years past, have led to crowding together an immense population in a confined space. So to speak, an entire town has been built on the roofs of an existing town, as if the earth failed the human race, and thus poor families and the working classes are condemned to the punishment of the 'Mansards.' An enlightened and reforming government is seeking to get rid of these evils. It opens to the light, it renders healthful, it embellishes the ancient city; and, with the invincible force of reliance and example, it urges private industry to take share in the work. It is necessary, then, we should follow this impulse. We must replace the houses that are being demolished,—we must get rid of the lodgings in the roof, and give a substitute for them,—and, above all, we must provide largely for the rapid and progressive increase of the population, which is the natural effect of the increase of the public prosperity." They must enlarge the city on all sides, therefore, he goes on to say, and must see that the houses unite all the elements of well-being and comfort; and, especially, that cheapness be studied in the building, so that they may be *let at a low price.*

This problem of cheap, healthful, dwellings is, indeed, one of the immensest importance.

Mr. T. Dyke Acland said, at the Society of Arts, the other night, after Mr. Rawlinson's paper on "House Accommodation;"—they were told by the highest authority that if the poor man needed a cloak they should give it him; but he thought the practical question was the discovery of such means as would enable builders to construct such houses as should, at the current rate of wages for labour, enable the occupier to pay a remunerative rent to the builder for his outlay. On the same occasion Mr. Edwin Chadwick pointed out some of the structural improvements necessary. "There were," he said, "the wall question, the grate question, and the chimney question, and there might be a window and a roof question, in addition to the ventilation question. There were wanted a non-absorbent brick,—a brick that absorbed, at all events, less than a pint of water,—and a wall that was not a prolonged sponge, occasioning damp, and requiring an excessive quantity of fuel to keep it dry: there were still required a more economical fire-place, which should give out as much heat with one-half the quantity of fuel at present used, and a chimney as well as a grate which did not discharge five-sixths or six-sevenths of the caloric unapplied: there was wanted a window, for the lower class of houses, which did not, as windows made with the very thin glass now used did, discharge by radiation about one-third of the warmth of a room, the product of combustion, so that if a poor man paid a shilling a week for the warming of his apartment, fourpence worth of the product of combustion was wasted by the inferior windows."

Lord Shaftesbury, who was in the chair, bore witness to the difficulty there was in erecting new healthful dwellings for the working classes in towns, so as to obtain a remunerative return. "In the country," he continued, "there was a very great difference in this respect; the cost of land, which formed the principal item in large towns, being so much less, and labour and materials cheaper. Still he had found that he could not build a pair of cottages for less than 280*l.*; and a high rent must be paid in order to afford a fair interest for that outlay. What they required, therefore, was a cheaper but not less efficient mode of building cottages, with not less than three bed-rooms, which he held to be indispensable for every family. Ventilation was a matter of the utmost importance, but the poor were found to prefer warmth to pure air so strongly, that he had in some instances resorted to the stratagem of introducing a concealed ventilator in order to render their dwellings healthy."

We may mention here that the County of Kent Labourers' Friend Society, for Improving the Dwellings of the Labouring Classes, are erecting cottages, which cost, including fittings, only 170*l.* the pair, and give accommodation to families at 1s. 9d. per week each, or 5 per cent. on the outlay. The society have recently published the plan, &c. of their cottages, now before us.* Each dwelling consists of three bed-rooms, a general living-room, and two stores. The two cottages form one gable, front and back; the party-wall runs up to the ridge, not through it; and the roofs slope away on each side of the wall.

The general living-room is 11 feet 4 inches by 9 feet 4 inches in size; the parents' bed-room the same; and the daughters' bed-room, 11 feet 4 inches by 7 feet 10 inches. It must be objected that the rooms are too low (7 feet 8 inches and 7 feet 6 inches), and that the outer door opens at once into the living room without an inclosure.

Can we need a stronger instance of the want of knowledge existing, when it is necessary to cheat people, as Lord Shaftesbury showed, to induce them to lengthen their own lives? Nor is ignorance in such matters confined to the class in question: it is, unfortunately, very general. Not simply is it true, that half the world does not know how the other half lives, but half London has not the slightest idea what the other half is like, or even where it is! Endeavours have long been made in these pages to supply this knowledge to some extent; and, following the same track, we will once more take our readers into the parish of St. Pancras, and glance at

The District of St. Jude.

This is a district of curious interest close to the Great Northern Railway Station, and deserves notice; yet amongst the thousands of people who pass along what was formerly the New-road, but is now called the Pentonville-road, Gray's-inn-road, and Bagnigge-wells-road, few are acquainted with the large heap of dwellings of the industrious poor on the site which is surrounded

* These may be obtained from Mr. C. J. Cooke (hon. sec.), Maidstone; or of Mr. H. Martin (agent), 18, Adam-street, Adelphi.

by these roads, and is bounded on the south by Britannia-street. On looking at the map of London, the space to which we are about to direct attention seems but a speck, and yet there are within its bounds several thousand inhabitants.

Walking round the outskirts of the district, one cannot fail to be first struck by the number and size of the public-houses, which have the effect of making the ordinary dwellings look more dwarfed than they would otherwise seem. At the corner of Britannia-street there is an imposing edifice, surmounted by a gilt lion, hirsute, and of great size. It would be worth while for those who take an interest in sculpture of this description, to get a tolerably near view of this specimen. It is much in the style of that remarkable monument of George IV. which once stood not far off; and it seems singular that the ingenious artist who designed the lion did not advise that the gaslight should be turned in, so that, at night, the head of the figure might shed forth a light similar to that which once attracted travellers with a better purpose in ancient times to the doors of sanctuaries. This, however, is but one of the numerous places of entertainment which are situated at short distances around this cluster of houses. Another of these, the "Pindar of Wakefield," was formerly a suburban inn where waggon-horses and drivers obtained refreshment on their way to London. The back part of the premises still contains some characteristic features, although the front of the "Pindar of Wakefield" has been masked. Another house bears on the front the effigy of Lord Brougham, in proper lawyer-like costume. Some years since, when this great public benefactor was under a passing cloud, "mine host" of this place turned the painting of his lordship upside down. Now, however, the head and wig are in the proper position.

The houses in St. Jude's are chiefly occupied by the industrious poor. In no part of London, of similar extent, will there be found so many widows, with families of children, struggling hard to earn a living by washing, ironing, and similar occupations. There is also a number of the better class of workmen with families, who are glad to avail themselves of low rent: there are several costermongers, and but few who are absolutely idle.

Many would feel surprised at the immense number of children who throng the streets and back-courts of this neighbourhood, and it is fortunate that a ragged school is conveniently placed in Britannia-street. The Reformatory in the same street is in useful operation. The chief employment of the boys there is wood-chopping. They are trusted in all parts of the house, and there seems to be no locking up of cupboards. Not long ago, the common room was gay with holly, interspersed with suitable texts. Since the opening of this place, about 120 youths have been received, and thus removed from most dangerous and desolate positions; and a large proportion of these boys have obtained good situations; others have taken to the sea. One youth, who some time since entered the navy, was in important engagements during the late war. He writes to Mr. Ward, the superintendent of the Reformatory, "I got a Crimean medal, and a clasp for the Black Sea, and a medal for Bomarsund, in the Baltic, and a clasp: so I have two medals and two clasps. I expect to have a star for the Sea of Azoff and a clasp for Kertch. I expect to be home next July, and shall have about 60*l.* coming to me." We might mention other instances of the use of this and similar homes, which can be duly estimated by those who have wandered in the courts and alleys of the metropolis, and have seen how difficult it is for those who have been once in the slough to emerge.

The district round Britannia-court is too poor to furnish much pecuniary help, and we regret to hear that the income derived from subscriptions and donations is so small that the committee sometimes fear they shall be compelled to suspend, or at any rate to curtail their efforts. It is to be hoped, however, that the inhabitants of the neighbouring streets and squares will afford their aid.

Besides the ragged school and reformatory, the large training establishment for children and teachers of the Home and Colonial Schools is a great advantage; and there is also the district church, in which are 500 free sittings. Although this is quite modern, the pulpit, which is carved, was brought from the church of St. Bartholomew's, by the Bank, removed a few years since. The interior of this church is both spacious and convenient, and it should be mentioned that a young decorative artist has, without cost, undertaken to relieve the monotonous colour of the walls with gilded scrolls and written passages of Scripture.

Modern British Huts.

A few years ago, when we glanced at St. Jude's district, the portion noticed was in a sad condition; since then it has been drained, and the sinks trapped.

It is satisfactory to find that, although this property belongs to various landlords, as we hear, the whole of the houses were at once drained into the new sewer, and great praise is due to the Rev. W. Norman for the exertions he used to see that those dwellings in the district which were then under his care were properly attended to in this particular. We are told he attentively watched the progress of the works, and either persuaded or obliged all to do their duty; and it must be satisfactory to that gentleman to feel that, by this good work, he has been the means of preserving health and saving life.

On entering the boundary the visitor will find within the line of high houses which surround it numerous streets of houses of small size and two stories high; the doors of some are not more than five feet high, and the rooms of size corresponding: they are built on the ground in the same manner as those in Agar Town, and, even with good drainage, are very damp. This evil is in a great measure increased by the shocking condition of the pavement, which can only be understood by examination. The streets have at some former date been roughly paved; but, although this district is within St. Pancras' parish, they are never swept, and at times the refuse accumulates in parts to the depth of two or three feet; large pools of stagnant water are collected here and there, and deep ruts and other irregularities are almost as bad as they were at Agar Town, which has been before described in the *Builder*.

"Fifteen-foot-lane"—as one of the streets here is called, and which runs along at the back of St. Chad's Well (a place formerly of fashionable resort)—looks most neglected, and when the weather is wet the people say it is scarcely possible to move along it. There are no gutters, nor any means of getting rid of the surface-water and the moisture; in consequence the damp sinks into the foundation of the dwellings. This may be seen by the dark colour of the bricks from the ground to about 4 or 5 feet upwards. It is a pity that in this instance, where the landlords have done their duty, the inhabitants of this place should be neglected by those who have charge of the pavements of the parish.

In Britannia-street the houses are tall, and chiefly let in tenements. The underground kitchens are in some instances occupied by families: the areas of some are not more than 2 feet 6 in. from the walls, and quite insufficient for either light or ventilation. At the top of this street there are two or three houses which contrast curiously with the newly-built part of the Home and Colonial Schools. In these the pantile roof commences at a height of 5 feet from the ground, so that the heads of most passengers reach higher than the walls. The rents are moderate, some small houses 4s. a week, back rooms (very small) 1s. 6d. a week, and others from 2s. 6d. to 3s. The water supply is good, and is turned on every day (Sunday included), but some houses are without dust-bins, and the people complain that the carts do not come round regularly. The gas-lighting is very deficient; a short time ago it was worse, the whole neighbourhood being left in total darkness.

Inquiries can scarcely be made in such neighbourhoods as this without learning the great amount of good which is effected by the London Missionaries and Scripture Readers, who, besides attending to those matters which are peculiar to their calling, are most useful in other ways; they gather up the children for the schools and reformatories, aid the sick, and, by their friendly advice, save many from difficulties.

AN ACCOUNT OF THE NEW PALACE AT WESTMINSTER, AND THE PROGRESS OF BUILDING IT.*

I HAVE undertaken to give some account of the new Palace at Westminster, or, as it is more commonly called, the new Houses of Parliament, and the progress of building the same, but I very much wish that this could have been done by the only person competent to do it. Seeing, however, that this unfortunately cannot be, I must appeal to you for that indulgence which is seldom refused to those who endeavour to do their best. The disadvantages of discussing in this room the works of living architects are obvious, and by no means inconsiderable, but there are also special reasons why to do so occasionally may be desirable. The objections alluded to chiefly apply when any detailed criticism is attempted, or any one-sided endeavour made to forestall the calm judgment of posterity. On the other hand, many details, both of progress and design, can be best treated of when they are fresh in the mind, and not effaced by the lapse of time passed in the practice of an absorbing profession. My province to-night is a very humble one. Criticism, in the present case, would only be an impertinence, and I propose simply to describe a few of the steps taken in the erection of the largest public building of our day, to indicate a few of the difficulties with which the architect has had to contend, and to give some general description of the structure which has been his constant anxiety for nearly twenty years. An architect is under great disadvantages in carrying out his views, when compared with his fellow artist the painter or sculptor. These for the most part design and elaborate their conceptions in the retirement of the studio: they acknowledge no master, are only subject to the restraints their vehicle imposes on them, and seldom submit their works to criticism until they have made them perfect to the best of their ability. An architect, on the contrary, works under a universal censorship: he is controlled and hampered when he is often considered most free, and his works are invariably judged by the experience of parts which are often the least important portions of his design. I say nothing here of cases where his conceptions are never realised, for my hearers must know too many cases of disconsolate churches linked to headless towers, to need to be reminded upon this point. Architects again are peculiarly

* Read by Mr. Edward M. Barry, Associate, at the ordinary general meeting of the Royal Institute of British Architects, February 1st.

exposed to that species of cheap criticism which consists in calling names, and of which we have now too many examples; while, above all, their errors, once made, are perpetuated without power of recall. They are also incessantly liable to attacks which they have no opportunity of resisting; and public bodies too often appear to find the process of condemning an absent and unheard architect, a pastime as pleasant as it is unquestionably safe. I do not say this with a view of in any way deprecating fair and genuine criticism in architectural works: on the contrary, I think there is far too little of it, and am quite sure that an architect may always benefit by its free expression. As regards the present instance, I am firmly convinced that the new Palace at Westminster, as it stands, with all its excellencies and defects, will hold its own against most assailants; but I do think that if an architect's position were fairly considered, we should have something more of calm inquiry, and something less of that trenchant declamation into which so-called architectural criticism seems so apt to glide. A building like the new Palace at Westminster, which is not only the seat of the two legislative chambers, but is also the greatest public office in the country, must in the nature of things attract considerable attention, and it has therefore been thought that some description of it might not be uninteresting to the members of the Institute. Before, however, I proceed to describe the building as it now exists, it may perhaps be desirable to dwell for an instant on the preliminaries of its erection. Many of those present will be able to remember, though I cannot, the burning of the old houses of Parliament on the night of Thursday, the 16th of October, 1834. An order had been given by Mr. Milne, a commissioner of the Office of Works, to destroy certain tallies in the Tally-office of the Exchequer; and through some misapprehension of orders these tallies were burnt in the stoves of the House of Lords, the flues of which would appear to have been defective, and to have thus caused the fire to spread to the whole edifice, which very soon became a prey to the destructive element, so that at one time even Westminster Hall was threatened.

Immediately after the fire an official inquiry was prosecuted before the Privy Council as to the causes of the disaster, about which hung considerable mystery, in consequence of some suspicions that it had been the work of an incendiary; but, after a patient investigation, their Lordships reported that the fire was purely accidental, and had been caused by the burning of the tallies above mentioned. Of course the re-construction of the building immediately engaged the attention of the Government; and, after Committees of both Houses had reported on the accommodation required, an open competition was advertised in July, 1835. The conditions of competition were in many respects similar to those recently issued for the Government Offices, with one remarkable exception, namely, that they prescribed the style of architecture to be employed, which was to be "Gothic, or Elizabethan." The conditions also provided that the King should be requested to appoint Royal Commissioners to report on the plans of the competitors, who were to send in their designs by the 1st of November of the same year. In compliance with this invitation ninety-seven designs, containing from one thousand to twelve hundred drawings, were received; and, while these were in course of preparation, a royal commission was issued to the following gentlemen, all of whom, it may be remarked, were amateurs, appointing them judges of the competition. The judges—Mr. Hanbury Tracy, Sir Edward Cust, Mr. Liddell, and Mr. Vivian, reported, on the 29th of February, 1836, in favour of designs 64, 14, 13, and 42, giving a decided preference to No. 64, which proved to be the work of Mr. Barry. After various inquiries bearing upon the nature and cost of the selected design, my father was instructed to prepare working drawings and estimates, which he undertook to do; while, as regards his remuneration, he consented (with a confidence not altogether justified by subsequent events) to leave it entirely in the hands of the Government. Accordingly, on the 7th of April, 1837, the Office of Woods reported on the architect's estimate, which had been placed by him in the hands of Mr. Henry Arthur Hunt, who then possessed his entire confidence, and advised him in all matters connected with the cost of the projected work. Messrs. Seward and Chawner, on the part of the Office of Works, having carefully examined the architect's estimate, reported their opinion that the design could be carried out for the sum of 707,104*l.*, which sum, however, they stated would not cover many extraneous works connected with the building. This estimate has been so often alluded to, and, as I think, so unfairly contrasted with the real cost of the New Palace, that I shall endeavour, before I conclude, to give some explanations concerning it, calculated to place matters in their true light before you. After this report from Messrs. Seward and Chawner, the works were ordered to be proceeded with, and the first vote of public money on account of the New Palace at Westminster was taken 3rd July, 1837. The first portion of the works was necessarily the construction of the river wall; and this was proceeded with under the joint superintendence of the architect and Mr. James Walker, the well-known civil engineer, who divided equally between them the customary remuneration of five per cent. for their services. A coffer-dam was constructed in the river, and the foundations of the wall laid upon concrete varying from 1 foot to 12 feet in thickness. In constructing the foundations great difficulties were encountered, as the soil proved in many cases little better than quicksand, rendering it necessary, in consequence, to incur much extra expense. The coffer-dam answered its purpose completely, and the foundations generally have proved quite successful. When the time came for the removal of the coffer-dam, my father resolved, in consequence of his experience of the treacherous nature of the site, not to draw the piles as had been originally intended, but to cut them off level with the dredged bed of the river: this was accordingly done, and the lower part of the dam remains in the ground and acts as a fender or advanced guard to the building against the scour of the river. The face of the terrace wall towards the river was faced with granite in large stones, and the walls being, as far as possible, brought up to the level of the terrace, the first stone was laid without any ceremony by my mother, on the 27th of April, 1840. While the foundations were proceeding, an inquiry was ordered to be made to ascertain the best and most durable stone to employ upon the superstructure. The Commissioners were Sir Henry (then Mr.) de la Beche, Mr. William Smith, Mr. C. H. Smith, and the architect, who, after a careful inquiry into the matters committed to them, presented a report on the 16th of March, 1839, which is, I doubt not, well known to most present. The result of this report was the selection of the magnesian limestone from Bolsover-moor and its neighbourhood, as the best for the purpose; and though the stone has not perfectly withstood the injurious effects of a London atmosphere, it is doubtful whether any other selection would have proved more fortunate. From April, 1840, the works proceeded with great despatch under the energetic management of Messrs. Grissell and Peto, who had obtained the contract after a limited competition among the first London firms; and it is only fair to these gentlemen to say that, from the commencement to the close of their connection with the building, their work and their arrangements for conducting the same were such as deserve the highest praise. In January, 1840, Dr. Reid was appointed to take charge of the warming and ventilating arrangements of the edifice, with authority derived direct from the Board of Works; thus conferring on him a position altogether independent of the architect. Dr. Reid's scientific attainments are well known, and he certainly succeeded in warming and ventilating the temporary lath-and-plaster House of Commons; but while wishing to speak of him with all possible respect, I cannot help thinking that to give any man a control, independent of the architect, over so large and complicated a building, was an administrative blunder of the highest order. Dr. Reid never professed to have any knowledge of construction, or of the practical means of carrying out his plans; and this, as may be supposed, complicated matters considerably. Whether it was in any way wise to attempt to adapt one unvarying system to a huge building like that before us, with its various apartments devoted to so many different uses, occupied some by day and some by night, some in a crowded state, while others are empty, and comprising public halls, offices, debating chambers, and private residences, I will not now stop to inquire: suffice it to say that Dr. Reid's plans soon lost the confidence of my father, who considered them detrimental to the stability, safety, and effect of the building, and that they consequently became the subjects of repeated controversies until the cessation of Dr. Reid's connection with the New Palace. Large flues and air chambers were constructed at a great expense, most of which are now comparatively useless, and delays and differences were but the necessary consequences of the error at starting. In the session of 1844, a committee of the House of Lords which was appointed to inquire into the progress made with the works, in consequence of a natural desire on the part of their Lordships to enter their new House, and a still more natural inclination to blame an architect for anything inconvenient, commenced its labours, and reported that several alterations had been introduced into the design by the architect without any authority from the Government—an accusation he explicitly denied by stating that he had received authority express or implied for all he had done. The alterations alluded to were a re-arrangement of a portion of the plan between the Victoria Tower and the House of Lords. The modifications were these.

By the original plans the royal carriage was to pass through the Victoria Tower, and set down his Majesty at an inner hall, from which a large flight of steps would have conducted him to his robing-room adjacent to the House of Lords, with which it communicated. This was, on careful consideration, thought undesirable, for the following reasons:—1. The great size of the tower would almost necessarily degrade the appearance of the inner hall, and its important character seemed to claim for itself to be the entrance of the Sovereign. 2. The staircase, though possibly handsome in itself, would have occupied too much space, considering its only occasional use, and with the inner hall would have cut up the principal floor, and rendered communication difficult: the robing-room was also somewhat contracted in dimensions, and there was nothing like the present Royal Gallery to serve as a waiting-room for the peers, for the admission of strangers to view the ceremony of opening and proroguing Parliament, and other public purposes. Great objections were made by some members of the Lords' Committee to these modifications, and many inconveniences foretold, both to her Majesty and their Lordships; but I am not aware that practice has justified these predictions, or reversed the opinion of the Committee of the House of Commons, which sat soon afterwards, and resolved that "no blame was to be attached to Mr. Barry for the course he had taken, and that they had every reason to believe that all the alterations hitherto made had conduced to the convenience and general effect of the building." It was at this time that many complaints began to be made in Parliament about the so-called delay in completing the building, and the anxieties consequent on the various committees and other inquiries, in addition to the unavoidable responsibilities of the architect, caused him a serious illness, and thus made a reality of that delay, which up to this time had been imaginary, as far as he was concerned. Indeed, had it not been for the hearty and generous support of Lord Lincoln (now Duke of Newcastle), who was then First Commissioner of Woods, I do not think the works could have been carried to a completion by my father. His Lordship took special pains to make himself personally acquainted with the nature and bearing of the various complaints, and having satisfied himself that they were not based on justice, threw the whole of his official weight into the scale, and gave the architect no half-hearted or stinted support in carrying out his views, until the close of his official connection with him. Having now traced the history of the building up to 1844, at which date the plan had finally assumed the shape which has been since executed, I propose to give some description of the edifice as now existing.

It will be remembered that the competitors were directed to design either in the Gothic or Elizabethan style: the former was considered desirable by my father, as being "homogeneous, well defined, and more or less in harmony with the existing ancient buildings on the site and in the neighbourhood;" while the latter would, he thought, be unworthy of the character of a great national edifice, and inharmonious with the existing buildings. Westminster Hall is made a part of the plan, to form a great public entrance to the entire building, so that it may now be viewed as a part of a great whole, instead of being as hitherto an apparently isolated room, used as a waiting-hall by counsel and other persons in attendance on the Courts of Law. The window at the south end of the hall was enlarged, and is now refixed in St. Stephen's Porch, which forms the chief public vestibule of the New Palace. The beautiful crypt of St. Stephen's Chapel and the cloisters adjoining Westminster Hall have been saved from destruction, and form part of the members' private entrance to the House of Commons. In restoring these, the fan groinings were found to be generally in a sound state, but all the rest of the work was in a deplorable condition. The cloisters have been carefully reinstated, and the windows glazed. Two great buttresses which formerly disfigured the quadrangle have been

removed, and the roof of Westminster Hall has been repaired and strengthened with iron shoes and tie-bolts. Members going to the House have a choice of two entrances, one through Westminster Hall, and the other through the Star Chamber Court. This arrangement was considered desirable on various grounds; and circumstances of public excitement may easily be imagined under which a double entrance might be found extremely convenient. The arcaded passage at the west side of the Star Chamber Court serves the purpose of a porch, and members then proceed to their private staircase, passing by the cloisters on their way, where they deposit their coats and umbrellas. They then proceed up a groined stone staircase to the upper floor, upon which the House of Commons is situated. A portion of the upper part of the cloisters is occupied by the British Paper Office, and another by a writing-room for members. St. Stephen's crypt is not yet out of the workmen's hands, but is in course of restoration. The groining here is in a very bad state, having been much injured by the fire. The carved capitals and bosses were also very dilapidated, and great difficulty has been experienced in collecting authority for their restoration; but, by having squeezes taken of the parts in good repair, which will guide the workmen in their restoration, I believe that object has been now obtained. The crypt was used by the Speaker as his dining-room before the conflagration, but is intended when restored to serve as the private chapel of the New Palace. It was considered very desirable that the various entrances and departments should be as distinct from one another as convenience of occasional access might dictate, and the Central Hall may be considered the key to the plan. A stranger passes to it through Westminster Hall and St. Stephen's Hall, and finds himself in an octagonal chamber with four archways leading from it, the other four sides being occupied by messengers, and the electric telegraph offices. On his right is the House of Lords, with its offices, libraries, and refreshment-rooms surrounding it as a nut-shell does its kernel: on the left, is the House of Commons, with similar appendages; while, straight before him, lie the committee-rooms and offices connected with the public business of Parliament. St. Stephen's Hall is over the crypt, and occupies the position of the former chapel. It is groined in stone, and the bosses at the intersections of the groin ribs are sculptured representations of the life of St. Stephen, by Mr. Thomas.

The Houses of Lords and Commons were placed in the midst of surrounding buildings, from considerations of convenience of access to and from their offices, &c., freedom from noise or interruption, and general safety. The committee-rooms, which are used by day, were placed in the river front, as being the most cheerful and appropriate place for them. The official residences of the Speaker and other officials of the House of Commons, are at the north end of the building; while the south wing accommodates the Lord Great Chamberlain, the Black Rod, and other officers of the House of Lords. The royal entrance is by the Victoria Tower, from which a flight of steps leads to the royal robing-room, an apartment 55 feet by 37 feet, now in course of being painted in fresco by Mr. Dyce. Her Majesty occasionally grants audiences in this chamber, and, having robed, then proceeds along the Royal Gallery (where strangers are admitted to witness the procession) into the House of Peers. The royal carriage passes in the meantime under the robing-room into the Royal Court, where it turns round and returns to the tower in readiness to receive her Majesty at the close of the ceremony. The House of Peers is 90 feet by 45 feet, and 45 feet high: my hearers must be so familiar with its general aspect, from prints or personal inspection, that I will merely state that it is fitted up with elaborate oak framing, glazed with stained glass representing the various kings and queens of England, and highly decorated with gold and colours. Portions of the end walls have been painted in fresco by artists selected by the Fine Arts Commission, and niches between the windows display statues in bronze, by some of our first sculptors, of the Barons who signed Magna Charta. The House of Commons is a much plainer apartment, though not differing greatly in actual dimensions from the House of Peers. After a few days' trial, and before the members had had time to get accustomed to the new chamber; judging, moreover, from morning sittings, when it is rare that any debate commands the attention of the House; it was determined to lower the ceiling for the sake of improving the acoustic qualities of the room. This was accordingly done, and has certainly not been an improvement as to architectural appearance, though it is said to have answered the purpose proposed. The ceiling is of oak, divided into a flat centre and two sloping sides: the panels in the centre compartment are perforated, and the House is lighted at night by lights placed over them, under the control of Mr. Goldsworthy Gurney, who has succeeded Dr. Reid in his office of warmer and ventilator. This mode of lighting is, I believe, considered pleasant by members, and has the advantage of being external to the room, and contributing to its ventilation; but the glare of unseen light, and the deep shadows thrown in all directions, render it very destructive of architectural effect. The refreshment-rooms are supplied with lifts and other modern appliances, and are placed over their kitchen and offices. The libraries are in the river front; and in the ground floor a smoking-room is fitted up with every convenience for those hon. members who wish to relieve their senatorial labours by a cigar. This addition, it may be remarked, is a modern innovation, and was not thought a necessary adjunct when the plans of the building were first arranged. With so many offices and apartments where members may place themselves, it may be imagined that it is a matter of some importance to give them early notice when their presence is required at divisions: this is effected by electricity. Bells are placed in upwards of thirty places, and are connected with a galvanic battery, so that the principal door-keeper is enabled to make contact and ring all the bells at once, by pressing his hand on a button attached to the arm of his chair. Any stranger who happens to be in the corridors when the bells are ringing, will soon be conversant with the fact of a division being imminent, by the rush of members in all directions towards the House, which places him in extreme danger of practically testing the hardness of the floor.

Having now given a description of the general arrangement of the plan, I propose briefly to touch upon the external features of the design. Few buildings have been more unfortunately placed than the New Palace at Westminster. A site full of quicksands and below low-water is seldom an agreeable incident in an architect's practice. Moreover, a large majority of the public first see the Palace from Westminster-bridge, which is decidedly the least favourable point from which it is to be seen. When the new bridge is completed at the lower level, and with the greater width now determined on, a great improvement to the appearance of the New Palace from this quarter may be expected; though it is to be regretted that the new bridge, following the line of the old one, will not be at right angles with the building. But if the present view from the bridge be unsatisfactory, that towards the Abbey is far more so. Here we have the incongruous and unmeaning façade of the law courts, the mean houses of the south side of Bridge-street, and the unfinished face of the Clock Tower. It is to be wished that these disadvantages could be removed; and, though there will be many opinions as to the best way of treating New Palace Yard, there will, I imagine, be few against endeavouring to give to the Palace on this side a more perfect and consistent appearance. My father has always advised the enclosure of the New Palace Yard, and recommended the removal of the law courts from Westminster; not only for reasons connected with the convenience of public business, but also from the difficulty of providing the accommodation required on the very limited site at Westminster.

In designing the New Palace, it was resolved to avoid as far as possible any breaks upon the plan not absolutely dictated by convenience or the nature of the site, such breaks being considered to tend towards reducing the apparent size of the building when seen in perspective. The river front was accordingly carried out without any very considerable breaks in the plan, and reliance was placed on breaking up the sky-line to avoid monotony: thus the centre portion is raised a story above the rest, and towers with high roofs play a conspicuous part in the composition, while the main towers of the building rise behind and form a background to the numerous pinnacles and turrets, as seen from the river. The carving between the stories of the river front was intended as a record in stone of English history. There are thirty-five bays, exclusive of the two oriel bays: each of these thirty-five bays contains the arms of an English sovereign, beginning with William I. and ending with William IV. The oriel bays bear the present Royal Arms of England, with the motto, "Victoria Regina feliciter regnans." All the stone carving here, as well as throughout the entire structure, has been executed by Mr. Thomas, to whom this department was specially entrusted by my father immediately after his appointment. Mr. Thomas has carried out my father's views entirely to his satisfaction, and in such a way as to make it impertinent in me to say one word of praise. Mr. Thomas's name and works are now familiar to every architect, and those who have the privilege of his private acquaintance will testify to the ability, skill, and indomitable industry, which have won for him the position he now occupies. The wood carving in the interior was not entrusted to Mr. Thomas, but was placed by my father under the superintendence of a gentleman whose name ought never to be forgotten as long as admirers of Gothic architecture exist in England: need I say that I allude to the late lamented Welby Pugin. Convinced that in all matters of Gothic details Mr. Pugin was *facile princeps*, my father sought his aid, first, in forming a collection of plaster casts of famous examples both at home and abroad, and then in superintending the practical execution of this work, by occupying a position precisely analogous to that filled by Mr. Thomas with respect to the stone carving. Mr. Pugin, with the spirit which always actuated him, readily assented to this proposal, and continued till nearly the time of his death to aid my father in carrying out his designs: in this manner his services were invaluable, and a number of carvers were trained under his auspices, more or less imbued with the spirit which animated himself. Mr. Pugin's department comprised the wood carving, the ornamental metal work, stained glass and tiles, at all of which he worked most indefatigably to carry out my father's views, which were naturally in many cases not altogether in unison with his own, but to which he at all times deferred. When I think of the good-humoured discussions, and the frank and hearty criticism in which he used to take part, it gives a fresh pang to the thought that that voice will be heard no more, and that a luminary so bright should have suffered so mournful an eclipse. I have often heard Pugin called a bigot and enthusiast, and possibly some of his earlier writings may give a colour to the imputation: I suppose, however, that no reformer of time-honoured abuses who is thoroughly in earnest can avoid such accusations; and those who knew Pugin most intimately will hesitate to endorse such a charge, and will know that he was (especially in his latter days) far more candid than many who now echo his views, without acknowledging the source whence they are derived. It ought never to be forgotten that Pugin upheld sound principles of design and construction at a time when his opinions were far from fashionable, and thus he consequently stood almost alone; and I think we of the present generation of architects, who have benefited so largely by his labours, ought jealously to guard his fame, and not to allow any one, however popular, to retail his opinions without giving due honour to their author. I must apologise, however, for this digression, and proceed with my task of description.*

MR. SYDNEY SMIRKE'S FIRST LECTURE AT THE ROYAL ACADEMY.†

THE most prominent and important principle of design is form. It is form that is mainly instrumental in giving expression to works of architecture. Colour-ornament, the elaboration of the smaller features of a building, such as doors, windows, and the like,—all these are no doubt useful contributories to the great object of giving character and expression to a building; but they are not alone and of themselves sufficient. It is the dome, the spire, the portico, the arcade; these, and such as these, are the forms on which a building mainly depends for its character. When these main features are right and true in their proportion and collocation, the design is sure to be successful in securing our respect at least, and fixing our attention; but if these fail—if these great and leading features be disproportioned or out of keeping with the plan and purpose of the building, or otherwise mismanaged;—then all the enrichments of art are exhausted on it in vain; and the most laborious and ingenious details are but labour lost. In this respect, as in many others, architecture and sculpture are kindred arts. The most beautiful details, the most exquisite finish, would fail to invest a statue with the character of high art if it be wanting in fine form; whilst the rudest sketch—the simplest outline—from the hand of a Michelangelo or a Flaxman, is stamped with immortality.

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* To be continued. † See page 101, *ante*.

I would by no means inculcate negligence of detail; nor would I have you in the least degree regardless of the charms of ornamentation. Sir J. Reynolds says, with his wonted truth, "As life would be imperfect without its highest ornaments—the arts—so these arts themselves would be imperfect without their ornaments." But what I would seriously urge on you is the paramount importance of the leading features of a design. Ornamental details may excite our admiration by their individual beauty, or by their happy adaptation to their place, or by their rich abundance, or by the judicious parsimony with which they are introduced, and they may act with the utmost utility in giving scale to our work.

On this latter ground, indeed, rests the main justification of that crowding together of minute details which characterises the later schools of Mediæval architecture.

Ornament, like a highly-tempered weapon, needs much caution in the handling. Not only must it be of a kind suited to the character and purpose of the building, but in quantity also it must be carefully apportioned.

These considerations should induce you to attach much importance and value to the proper study of ornamental details, but not to forget that they take a secondary place in your professional estimation.

The experience of every one must be able to afford illustration of this truth, viz. that the greatest and most impressive effects of architecture are irrespective of mere ornamental details.

After having imperfectly seen a building for the first time, at night, or in the shades of evening, and having been deeply impressed with a sense of its grandeur, how often are we surprised (perhaps indeed disappointed) on the morrow by finding it of insignificant dimensions, or of mean construction! It was its fine outlines, its broad chiaroscuro, its deep shadows, which had produced this profound impression. Nay, I have even found in the morning that I have been looking over night with some interest, if not with admiration, at what has turned out to be but a temporary structure of poles and tarpaulins. Such is the magic of form and effective chiaroscuro in our art. I can have but little doubt that the striking effect of a Gothic cathedral is mainly due, not to its intricate enrichments, not to that exquisite variety and elaboration of its details, upon which undiscriminating admirers of Middle-age art are too apt to lavish their exclusive praise (and on which students are too apt to bestow their exclusive attention), but to the breadth of its main features, to the variety of its masses, and to the grand and surprising effects produced by its lights and shadows.

I am the more led to dwell on this, because ornament exercises an extremely seductive power over the minds of younger students. Florid beauty in architecture may be well compared to an over-ornate style in oratory. We are dazzled by the splendour of phrases—by the flow of brilliant words: the flowers are strewed before us in such charming abundance that we are led away by our admiration of them, and forget to exercise a calm and rational judgment on the main merits of the production, as a work either of logic or of rhetoric; and we are in no mind to inquire into the fitness or propriety of the decorative adjuncts. Thus it is that the younger practitioner is easily reduced, by an erroneous estimate of the value of this secondary object, or by a latent desire to display his dexterity in superficial embellishment, to impair the breadth and solidity of his essential design. I, therefore, repeat that the vital principle of architectural design is form.

I think that there are three principal and very distinct, sources of beauty in architectural composition.

1st. There is a beauty in the aptitude of a form; that sense of satisfaction which the mind experiences when perceiving the nice adaptation of any object to its purpose.

2ndly. There is the beauty of symmetry; that pleasing impression produced, I know not why, by regularity of arrangement, and by exact correspondence of the several parts. Perhaps this sense of the beauty of symmetry may be founded on the almost universal prevalence of symmetrical arrangement in the works of nature herself in animate as well as in inanimate creation.

3rdly. There is the beauty of the picturesque; a pleasing impression (differing very widely from the last, and sometimes almost opposed to it, and equally difficult to account for), which is made on the mind by irregular, but not confused or discordant, combinations of form.

It will be neither in accordance with my inclination, nor (fortunately for me), any part of my duty here, to attempt to discuss these matters metaphysically; but I will invite your attention while I enter into a practical consideration of these three sources of beauty as applied to our art. I do not pretend that under these three heads all kinds of formative beauty can be classed, but they will be quite sufficient to engage our attention on the present occasion.

It is not only good taste, but common sense, that teaches us that a form should be fitted to its purpose; and, as I have said, the fulfilment of this first great condition is in itself an element of beauty.

But I am afraid that the mere dry, unimpassioned beauty resulting from the quality of fitness, however it may satisfy the engineer, will hardly suffice to meet the aspirations of the architect.

As sensible men we cannot admit the beauty of any object that is irrational, or idle, or unfit for its purpose; yet as artists, or intelligent observers of art, we desire this, and something more. I think that this kind of beauty, and the distinction which I am endeavouring to draw, may be illustrated by a very simple comparison between two familiar forms, viz. the Doric capital of Grecian art and the cushion capital of Middle-age art. Both are so far beautiful, inasmuch as both are well adapted to their purpose: both convey, in the simplest and most effective way, the vertical pressure of the superimposed weight down on to the circular shaft whose office it is to bear that pressure.

These two capitals are eminently typical of the two schools: a straightforward, honest simplicity; an absence of refinement, not to say a rudeness, characterises the later capital; whilst the more ancient type, although honest and simple enough, gives evidence of a more refined feeling, a more skilful working out of an idea, which distinguished the Greek artists from those who have preceded or succeeded them. The parabolic curve of the echinus shows a nicety of execution which the mathematician only can fully appreciate or comprehend, but the higher merit of which all can feel. The sharp, expressive quirk between the echinus and the abacus, forming a thin line of shadow, well separates the square from the curved parts; whilst the annulets at the necking delicately, yet distinctly, define the capital from the shaft, without any disturbance of the outline.

It is said by Cicero, "*Venustas et pulchritudo corporis secerni non potest à valetudine.*" We, in like manner, might say that it is difficult to distinguish clearly between the beauty of an architectural form and its strength and suitability to its purpose. This quality of suitability of form will ever be held in popular esteem, for it can be understood and perceived by all; whilst it is the privilege of the few only to estimate æsthetic beauty at its true value. In this country especially, where the general mind loves to hover in the lower atmosphere of practical science, and soars reluctantly into the higher regions of Æsthesis, this utilitarian quality has peculiar attractions. There are thousands of otherwise highly-educated minds which distinguish no superiority in a Greek tazza over an ordinary garden-pot. Both, they will say, are alike adapted to their purpose; both fulfil their destinies with equal efficiency; therefore both are alike worthy of our approval.

I have known a critic of this school condemn to utter ridicule a colonnade of finely-proportioned stone columns as being a clumsy and senseless contrivance, inasmuch as they are, perhaps, 4 or 5 feet in diameter; whereas iron posts, a few inches only in diameter, would have answered every purpose. To answer such a criticism is but labour lost, and the sorrowing artist has but to sigh and pass on.

> "Miserecordia e Justizia gli sdegna,
> Non ragionam di lor, ma guarda e passa."

Now as to the beauty of symmetry. Our great master, Vitruvius, thus instructs us:—"Symmetry," he says, "results from proportion. Proportion is the commensuration of the various constituent parts with the whole; in the existence of which symmetry is found to consist, for no building can possess the attribute of composition in which symmetry and proportion are disregarded."

It may be difficult, in few words, to express all that is intended to be comprised in that word—symmetry; but there can be no doubt that the just balance and correspondence of parts, and the regularity of their general arrangement, which constitute the essence of symmetry, is a never-failing source of pleasure to the critical eye; and here we perceive (what I have already adverted to) an instance of the analogy which our works bear to those of nature, who, in her greatest work, the human frame, has set before us an eminent example of perfect symmetry. This quality has ever been eminently architectural: we recognise the attribute of symmetry in the avenue of Sphinxes at Memphis; in the façade of a Greek temple; in the long-drawn aisles of a Gothic cathedral; in the stately colonnades which surround the cortile of St Peter's. We find it in its highest condition in the works of the best Italian masters; pre-eminently, perhaps, in the works of Palladio, where, without effort or artifice, with the most sparing use of the adscititious graces of ornament, we are charmed by a symmetrical elegance; a uniformity without dulness; a simplicity without heaviness; an almost feminine grace without a moment's forgetfulness of that dignity which is the character of all others the most becoming in works of architecture. A want of symmetry in parts where its want is patent is a fundamental defect which no art can hide and for which no beauty of individual parts can compensate.

The want of due proportion between the dome of St. Peter's and the body of the building has been often noticed by critics, and not without ground, as an instance of this defect; and I might cite an example of a like defect, although under very different circumstances, at Munich. There, the enormous statue of Bavaria crushes into Liliputian insignificance the otherwise beautiful colonnade which accompanies it. In this case, had it been the artist's purpose, by this entourage, to enhance the size of his statue (whose bulk may be comprehended, by those who have not seen it, from the fact that twenty persons find seats within the head), he might have been welcome to sacrifice a whole hecatomb of life-size statues around the feet of his colossal image; but it was a treason to architecture thus to reduce a fine Doric portico to the proportion of a plaything, and to sacrifice the dignity of our art in order to magnify the vastness of his figure.

I proceed now to the third source of architectural beauty, viz. that resulting from the picturesque.

If there is difficulty in defining symmetry in few words, a succinct definition, or rather description, of the word picturesque, is far more difficult.

As I have said on a former occasion, there is no quality which it is more dangerous to affect than this, for the spell is at once broken, and the author loses the reward of his art, as soon as it is perceived that there has been a laboured effort made to produce it;—like the Spartan rogue, who only gained a lawful exemption from punishment for his theft by the dexterity with which he contrived to commit it.

The ecclesiastical and castellated piles of the Middle Ages are perhaps the most striking as well as the most familiar illustrations of this high quality of art, if art it may be called where concealment of art is the best proof of it.

Such works are no doubt subject to certain general laws of composition; but these laws are somewhat shadowy and difficult of definition. In outline and chiaroscuro there must be variety without confusion, and irregularity without disorder. Extreme simplicity is, perhaps, hardly admissible, yet complexity is by no means essential, for we may find highly picturesque effects resulting from compositions presenting very few features.

All who have travelled over the classic land of Italy must have been struck with the pictorial effects, often to be met with in the Campagna, of even the most unpretending rural buildings. In our own country, too, how attractive are the groups of gables and chimney-shafts often presented by the smaller buildings of the Tudor or even later age! It is an encouraging reflection for the student that there is ample room for good art, even in the simplest productions.

There is a principle which I must not fail to notice, as I believe it to be applicable to all large architectural compositions, although, perhaps, more especially to those of a picturesque character. I refer to a certain subordination of the various parts of a composition to one predominant feature or group. In every large composition, whether it be a building or, as I believe, a picture, a kind of unity should be preserved by concentrating effect,—by giving, not, indeed, an undue, absorbing interest to any one portion of the design, but a decided and clearly marked preponderance to one portion; for I think it is a remark of very general application, that where interest is scattered, it is sure to be weakened.

Our own St. Paul's is an instance especially in point, and affords a remarkable example of happy adjustment of its various parts, giving to the dome just importance enough to secure its pre-

ponderance, without overwhelming the subordinate members of the design.

The superiority of the effect of those cathedrals, such as Salisbury, Lincoln, Lichfield, and others, which have main central spires over those where that main feature is wanting, such as at Winchester, Westminster, Peterborough, and elsewhere, is also an obvious illustration. It was, no doubt, to some æsthetic consideration of this nature that we owe the noble gate-towers of most of our colleges, and of many of the older baronial mansions in this country, such as Burleigh, Knowle, and the like; where these central features, rendered forcible by their superior height and enrichments, connect, as it were, the various parts of the composition, and give it that unity which, as I have said, adds so much value to a design. I might name Greenwich Hospital in further illustration, as a building which must, I fear, be regarded as deficient in this respect; and I can hardly doubt that this building, as we now see it, is but part of a larger and more connected design which its distinguished author was, unfortunately, unable to realise.

You will have observed that, in the somewhat desultory remarks I have addressed to you, the subject of styles has been but slightly treated. This has arisen from no want of due appreciation of the importance of that subject. There is no doubt whatever that a thorough, discriminating knowledge of the several recognised styles that have prevailed in the more highly civilized countries of different ages, forms an essential part of the education of every architect. But I believe that I shall be best fulfilling my duties here by drawing your special attention to those broad principles of design that seem applicable to all styles; to a right understanding of which principles the acquirement of a knowledge of details must, as it seems to me, be always subordinate. At all events, I shall take no part in attempting to decide on the conflicting claims of styles contending for general adoption. Each has its votaries,—I may say rather its idolaters; and the contest is one into which I have no mind to enter, here or elsewhere: for I believe it to be taking a very narrow view of the study of the art, to confine our admiration, or to limit our attention, to any one style; whether it be that which flourished under Pericles,—that which reached its culminating point under St. Louis, or our Edwards,—or that which left in the great municipalities of North Italy, enduring monuments of originality and genius.

The time may come when architecture shall take a loftier flight, and find a more firm footing, unencumbered by prejudice or pedantiry. Two revivals have marked the history of modern art. There was a great revival in the fifteenth century: nothing could exceed the enthusiasm of the artistic world, when Lorenzo assembled around him the scholars and artists who completed that great change: but with all their ardour there was no want of discriminating judgment. They dug up, and measured, and studied, with minutest care, the works of the classic ages, but they wrought themselves in an unfettered spirit.

The style of antiquity was by them so modified to suit the wants and habits of modern civilization, that their works became as much marked by originality as by beauty: it may, indeed, be questioned whether the world has yet seen men altogether equal to some of the cinque-centists.

Let us have a care that the second revival, that of the nineteenth century, is not marked by a narrow, sectarian spirit, and by the ignoble results inevitably attendant on a blind, servile, superstitious adherence to precedent; a feeling from which the great movement of the fifteenth century was wholly free. Before the noble school of Giotto arose, the best painters were wont to paint the heads of men, conventionally, with elongated eyes placed somewhere about their temples, and to represent their horses stepping out with both legs together on the same side: they did so, because their old Byzantine teachers had done so before them; but as soon as that great master taught them how to see nature as it really is, an immense stride in art was at once taken.

It would, I admit, be unfairly representing the present state of architecture to place it on a level with the condition of art, or of science in those earlier days; but it is undeniable that we have much to unlearn, many prejudices to dismiss, before our art can take its true place.

It may be long before a Giotto or a Bacon arises in our art; but I look forward more hopefully to the result of a combination of many minds acting in an earnest spirit and guided by right principles.

THE LEEDS WORKHOUSE COMPETITION.

A very numerous meeting of ratepayers was held last week at Leeds, when resolutions deprecating the procedure of the committee of Guardians, and expressive of a desire that the Guardians should examine the whole of the plans, and secure the services of a disinterested and eminent architect to assist them in selecting the best, were passed without opposition. These resolutions were laid before the Guardians, who have, nevertheless, as a body, adopted the report presented to them by their committee, confirming the previous decision in favour of the three sets of plans already named in our previous notice of these proceedings.

After the Guardians had resolved to adopt their committee's report, the chairman asked the clerk to "read the letters accompanying the plans," and the clerk did so, from which it appeared that the following were the names of the architects of the different plans, with the mottoes used:—

"Alpha," Messrs. Perkin and Backhouse, Leeds, first prize; "Queen's Head," Messrs. Lockwood and Mawson, Bradford, second prize; "Z," Mr. Wm. Hill, Leeds, third prize; "Utility and Economy," Mr. Wm. Blacke, Fenchurch-street, London; "A. Z." Mr. George Smith, Park-lane, Leeds; "Fides Z." Messrs. Bellamy and Hardy, Lincoln; "Cricket Ball," Mr. T. H. Hovenden, London; "Plain and Substantial," Mr. Moffatt, Doncaster; "Picco," Mr. H. J. Paull, Cardiff; "Industry," Mr. George W. Styan, York; "A" in a triangle, Mr. Henry Dyson, Leeds; "The Wanderer," Mr. Robert Wild, Manchester; "Utilitas," Messrs. Nash and Son, Royston, Cambridgeshire; "Hope," Messrs. Birch and Cooke, London; "Fortunas Sequatur," Mr. Percival, London and Gloucester; "U. C. I. X. L." Mr. Samuel Deakin, Birmingham; "Be it so," Mr. C. Manton, Wolverhampton; "Justitia," Mr. S. C. Capes, Furnival's Inn, London; "Delta," Mr. G. Corson, Leeds; "Excelsior," Messrs. Briggs and Everall, Birmingham.

The Chairman said that no letters had been received respecting four of the plans, the mottoes on which were "Alpha in the Ring," "Equilateral," "Z." and "Eboratum."

Eventually it was decided, by a majority of six to four, that the plans should remain at the Industrial School till further orders, for the inspection of the public.

At the meeting of ratepayers referred to, one of the successful competitors expressed something like a sense of shame that he should have occupied such a position neither fairly nor honourably, at the same time expressing a very confident opinion that were the Guardians obliged to retrace their steps, the plans in which he was interested would have occupied a still more prominent position than the Guardians had assigned them.

All we shall say for the present for our own part is that where there is an obvious disposition, or a foregone conclusion, to give the preference to local architects, it is a shameful blind to pretend to open the competition to architects in general, thus giving an immensity of hopeless trouble and expense to strangers who confide in the good faith and honour of such local managers as the Leeds Guardians appear to be. The very opening of the letters of the unsuccessful competitors would seem to be a breach of good faith, however far it may go to satisfy the Leeds public, or to enable them to choose for final adoption what may really appear to be the most suitable plans for their new workhouse.

THE SANITARY STATE OF OUR BARRACKS AND MILITARY HOSPITALS.

However quietly and unrecognizedly, the *Builder's* efforts on behalf of the sanitary improvement of human habitations are every now and then yielding good and useful fruits, as even those official investigations which in the mean time only open up the sanitary sores of the community to public attention may well be called; for the official and statistical recognition of the existence and extent of an evil prepares the way for its speedy amendment. And such is the hopeful position of the sanitary question as it now regards the accommodation and arrangements in barracks and hospitals. The country has just been horrified by the publication of the results of an official examination into the sanitary state of our army at home in its barracks and hospitals. From the report just issued by the Royal Commission appointed for the purpose, it appears that the mortality, especially amongst those picked regiments the Guards, is something really fearful, being more than twice as great as that of the most unfavourably situated of all the employed classes of the community. The chief cause of death is pulmonary consumption, and the commissioners rightly consider that the want of ventilation, closeness, and insufficient accommodation in barracks and hospitals, are the main cause of this astounding state of things. The Guards are not only the picked lives of the community, but even of the army, which is itself the *élite* of the nation, as regards physical vigour and vitality in general. Yet such is the deadly influence of our barracks and hospitals that the mortality amongst their inhabitants is more than double that of the very classes from amongst which they are picked as the healthiest and most vigorous, and physically perfect. This is no new subject with us: we may point to our previous observations on military hospitals, elaborate reviews of the competition plans for barracks, the Crimean disasters, and our call for a sanitary staff for the army in India.

Amongst the worst barracks of all are those in the best neighbourhoods,—St. James's-park and Knightsbridge. At the former the sergeants, it is said, when they go to call the men in the morning, rap loudly at the doors, but dare not go in until the windows have been for some time open, so horrible is the stench!

No wonder, under such circumstances, that consumption should be rampant; but why such a state of things should have been allowed to go on as it has been is no less matter of astonishment. We must return to the important report to which we have merely referred.

ON COLOUR.*

Colour is the great element of beauty: it gives spirit and life to form, which it develops by contrast. Colour originates from light. If the rays of light are intermitted or obstructed, they produce colour. Perfectly pure light may be represented by white,—the total absence of it, by black. Between these range the tones of grey which are combinations of colour. White reflects light; black absorbs it; and from this cause a white object will appear larger than a black one of the same size. To illustrate this I have prepared some diagrams, the half on a black ground, the others on a white ground. Out of the black I have cut certain pieces, which I have applied to the white ground, so that the spaces of both are identically the same in actual size, although the white appear larger than the black. If these black and white diagrams are looked at through the prism, the direct rays of white light being interrupted, those intervals of simple white and black become one gorgeous array of the most intense and brilliant colours.

This series of colours is called the "Solar spectrum;" and, according to the theory of our countryman Newton, consisted of seven, namely, red, orange, yellow, green, blue, indigo, and violet. Modern philosophers, however, have arrived at the conclusion that of these there are only three primary colours, namely, blue, yellow, and red, the remaining four colours being produced by the mingling of these three. May not the theory of light be this—that, being acted on by electricity, it has positive and negative poles, and that these represent respectively heat and cold; that by the negative pole cold light, blue, is produced; that by the positive pole warm light, orange, is produced—orange diminishing to yellow, or increasing to red, according to the less or greater degree of heat?

If you look at a white sheet of paper with a prism you will find the upper edge of the paper coloured red, softening to yellow, into white, and the lower edge softening from bright green to deep blue, as I have indicated in the diagram.

There is no line of separation between yellow and red. It is impossible to say where the one ends and the other begins. If the sky is clear the sun looks bright yellow: when it is obscured by fog it is quite red; or when shining brightly, if looked at through a glass that has been blacked by smoke, it appears red.

I will illustrate this theory by the effect of light in photography. All practitioners of this beautiful art know that, in taking a picture, objects which are blue are represented as if they were white; and those which are yellow, orange, or red, as if they were black. Thus, a lady in a blue dress with yellow ribbons would be represented in the photograph as in a white dress with black ribbons.

Thus it may be that in light there are but two fundamental colours, orange and blue.

* Read at the Architectural Exhibition, by Mr. John G. Crace, on Tuesday, February 16th.

Leaving now the abstract question of light, I return to that of *colour*.

There are three primary colours, called so, because they are each distinct, and cannot be composed of any others; these are yellow, red, and blue. In shades of white light, the primary colours exist in the following ratio:—

Yellow..... 1.
Red..... 2.
Blue ..... 3.

And if mingled in these proportions with white, they produce tones identical with the admixture of black and white. On a disc I have coloured bright radiating stripes of the primary colours in the above proportions. On turning this disc with some velocity, you will see that the colouring of the primaries becomes blended into grey.

Let us try another experiment.

I have here certain colours, "ultramarine blue," "chrome yellow," and "vermilion." I mingle them in the proportions of three for blue, one for yellow, and two for red. I add to them some white: they produce *grey*. Now I take some black; add to it some white, and we have again *grey*, and the two tones are the same. I think these two experiments prove the identity of the primary colours with white light.

On the Secondaries.

By mingling any two of the primaries together the "secondary" colours are produced. Thus,—

Blue and yellow produce green;
Yellow and red „ orange;
Red and blue „ violet.

Thus green, orange, and violet are the "secondaries."

On the Tertiaries.

If the above "secondaries" are commingled, the "tertiaries" are produced; thus,—

Green and orange produce citrine;
Orange and violet „ russet;
Violet and green „ olive.

On Contrast.

Every primary colour has a complementary composed of the two remaining primaries, forming a secondary; and every secondary has a complementary, formed by the remaining primary.

Every arrangement of colour demands the presence, in some shape or other, of the three primaries: the eye expects them, and without them remains unsatisfied.

This may be illustrated by the following experiment:—Take three circular pieces of coloured paper, place them on a toned white ground, look at them separately for some time in a subdued light, and it will be found that the red paper is bordered by a halo of soft green; the yellow paper by one of violet; the blue paper by one of orange: thus, these colours are complementary to the primaries, and, *vice versâ*, the primaries are complementary to the same secondaries. These are essentially contrasting colours, being those which most strongly oppose certain qualities in each other. Thus blue is a cold, orange a fiery colour; yellow a bright and advancing, violet a retiring colour; red a hot and glaring, green a quiet cool colour. This in a few words explains the basis of the whole theory of the laws of contrast in colouring.

When two contrasting colours are brought in contact, they are each affected by the complementary of the other: this is called *simultaneous contrast*.

The eye, having looked for some time fixedly on a coloured spot, such as a red wafer, on a white ground, in a shaded light, that object being suddenly removed, the space lately occupied by the object becomes coloured with the complementary of that object, which in this case would be green. This is successive contrast.

When the eye has looked at a particular colour for some time, and afterwards directing its sight upon another, carries with it the effect of the complementary of the first colour to the colour last seen, to its injury or advantage, as the case may be. This is mixed contrast.

Several men of high attainments have written upon this subject; more particularly Goëthe, who published his interesting work on "The Doctrine of Colours" in 1810. This has been translated by Sir Charles Eastlake, who added to it notes of great interest and usefulness. It is also treated of by our own countryman, Field, whose works on colour I consider the most practical and valuable of any on the subject of colour. He first published in 1816. And, lastly, Mons. Chevreuil, who, in his work published in 1838, illustrated the question of simultaneous contrast by a great series of experiments of the highest importance.

This subject demands our careful consideration, for it affects materially the relative value of colours opposed to each other. Those who have not considered the subject can scarcely estimate how strongly the complementaries occasionally influence colour. I will illustrate this by a fact noticed by myself. I was, one hazy morning, with a friend, walking over Waterloo-bridge, when my attention was directed to the two towers of Hungerford-bridge. You recollect probably that these are stone colour, and that they are roofed with red tiles, which project considerably, causing a strong shadow under them. I was astonished to find that the cornice under the projecting roof was full green. "Well!" I exclaimed, "they *are* fond of colour to do that." I supposed it to have been ordered by some director who had been to Holland and brought back a vivid remembrance of a lust-haus there. In an hour or so I re-passed the bridge: the day had cleared, the mist had passed away, and with it had departed the green cornice that I had seen so vividly an hour or two before: no trace of green remained.

Goëthe gives a far more interesting anecdote relative to "successive" contrast which occurred to him. He says, "I had entered an inn towards evening, and, as a well-favoured girl, with a brilliantly fair complexion, black hair, and a scarlet boddice, came into the room, I looked attentively at her as she stood before me at some distance, in half shadow. As she presently afterwards turned away, I saw, on the white wall which was now before me a black face surrounded with a bright light, while the dress of the perfectly-distinct figure appeared of a beautiful sea-green." Goëthe's attention was certainly very powerfully directed to the young lady, but "complementary" seems scarcely the word to attach to this instance of successive contrast.

The theory of "simultaneous contrasts" applies to tone as well as colour. When a dark colour is placed next a light one of the same tone, at the point of contact the light will appear lighter, and the dark darker.

The succession of shades shown in the diagram (No. 1), though each perfectly flat, has the appearance of a series of flutings from this cause. This contrast of tone is particularly to be borne in mind in imitations of relief figures or ornaments.

I now request your attention to the series of examples showing the contrast of various combinations of colours. The changes which these colours experience are invariable, and are the result of the action of the complementaries of each colour upon the other in contrast with it.

If you look carefully at the series of illustrations numbered 2 to 16, you will remark in the contrasts of green and red, or orange and blue, or yellow and violet, how powerfully these colours are acted on by contact—how they intensify and brighten each other; how orange, by its complementary blue, makes each colour next to it of a bluer tone; how the red renders them more green, the yellow more violet, and *vice versâ*.

The diagrams, Nos. 17 to 22, give a series of examples of primary and secondary colours juxtaposed with white, which it will be found heightens the tone of these colours, and is also in turn powerfully affected by their complementaries.

Nos. 23 and 24 show that grey and white, and black and white are each intensified by contact.

Nos. 25 to 31 show how black lowers the tone of colours, and is affected by the complementaries of the colours in contact; some, as yellow, greatly enriching the black; others, as violet, deteriorating it.

Nos. 32 to 36 show various colours in contact with grey, which in each case adds to their brilliancy, and is itself affected by their complementaries.

These illustrations of simultaneous contrast follow upon the theory explained by M. Chevreuil with great precision and ability in his work on "Colour;" but I think it right to mention that I by no means agree with M. Chevreuil throughout his work; and that where he attempts to regulate decorative effects of colour, his combinations are not always beautiful or happy.

I might allude to many occasions in which I have noticed the action of the complementaries. In the church of St. Paul, at Brighton, which is rather dimly lighted, I noticed, while sitting at some distance, that the arch of the chancel was decorated with ornament apparently in several colours. On approaching it I found that the ornament was simply black on the stone-coloured ground. This small figured chintz, printed in red on a white ground, has often, in a subdued light, appeared to me as if it were a shawl-pattern printed in many colours. I will not take up your time by further illustrating a theory which is probably already known to most of you.

There is another subject of contrast which, though similar to the preceding as to the laws which regulate it, is different in its application.

It relates to the effect produced upon any colour where applied upon grounds of other colours. The changes thus caused are most startling to those who have not experimented upon them. You will find that what looks blue on one ground is green on another; what is yellow in one case becomes green in another; and grey is either pale yellow, pink, or green, according to the colour on which it may be placed.

In fact, there are no colours of any positive tone: they are only what they are made to appear. White beside a colour heightens its tone. Black beside a colour lowers its tone. The shadows of a colour are always affected by the complementary of that colour.

When ornaments are painted on a gilt ground it is necessary to outline them with a deep brown or warm black; and if they are painted on coloured grounds without lights and shadows, an outline of white, black, or gold is equally necessary.

On Harmony.

In contrast I have endeavoured to explain how the various colours act upon each other when placed in direct opposition. I have now to consider how they may be brought into harmonious combination.

To arrange satisfactorily various modulations of colour, so that they may mingle together and form an agreeable whole, demands careful study, practice, and taste, and is often a work of great difficulty; yet this is accomplished by Nature in every flower that blows. I have often been delighted and surprised at finding how wonderfully the laws of harmony in colouring are expressed in flowers. The rich tones of blue contrasted by yellow and orange, in the garden iris; the drooping fuschia, whose hanging petals of bright red are contrasted by the rich purple centre; the blue passion-flower, with its fibrous coronet of deep maroon, and its greenish yellow stamens; the beautiful lancifolium lily of pearly white, dashed with spots of most intense carmine; the glowing cactus; the field poppy; the pansies, of violet and yellow; each flower not only combining in itself all that is most beautiful, but even in its leaves bearing the green tone most suitable for its colouring.

It has occasionally been my good fortune to travel over the moors in Yorkshire about August, when the purple heather is in full bloom. What a magnificent sight it is to see the undulating hills for miles around covered with the glowing colour, broken at intervals by patches of feathery ferns, their green, by contrast intently bright, giving a glow of colour not to be conceived by those who have not witnessed such a scene.

One of your most distinguished professors assured me a few days ago, that for two years he directed his attention specially to the study of the colours in flowers, and, from the pleasure he derived in the pursuit, looks back upon that time as one of the most interesting periods of his life.

Certainly, it is my own conviction, and it is also the opinion of first-rate ornamental painters, that the study of flowers is the very best school for the artist in decoration.

What triumphs of colours do we see also in some of the exotic birds!

Here Nature seems to revel in all that is difficult and complicated in harmony of colour.

I have some specimens here, in order to show how wonderfully Nature works as a colourist.

Remark this centre bird, its body of rich glowing yellow, with its black wings, and the beautiful grey margin about the eye, this grey the very colour of all others to soften the yellow, and introduced with such good effect in a specimen of Pompeian colouring, to which I will allude presently.

In others you will see maroon contrasting with blue—red, yellow, and black—blue, purple, and green—all brought into perfect harmony by Nature's hand.*

THE TRAFALGAR-SQUARE FOUNTAINS, AND HOW THEY MANAGE THEM.

"But wherefore all night long shine these?
For whom this glorious sight when sleep hath shut all eyes?—*Milton.*

SIR,—One is often tempted to carry that threat into execution, on witnessing some matter we consider grievous, either at home or when we travel—namely—"I will write to the editor of the *Times* on this subject." I, however, think what I have now to complain of more especially concerns the readers, and they are of all classes, who are inter-

* To be continued.

ested in the periodical over which you preside with such good effect.

I beg, then, to direct your attention to that old grievance,—the fountains of Trafalgar-square. I am not, however, about to recapitulate any of the bygone criticisms on these architectural and sculptural fabrics, or to originate any new ones on that somewhat worn-out topic: every argument has been urged against them: the public critical voice has had its say; and, having vented its spleen upon them, has now directed its judgment to other subjects.

What I think requires some remonstrance is the extraordinary seasons at which these wretched jets are accustomed to disport themselves. We associate with the idea of a fountain the other bright and cheerful ideas of summer weather, and its accompaniments of blue sky and sunshine: we look upon it as that thing of beauty, "a joy for ever," on a summer day: we in the proper season enjoy the beautiful object, refreshing to the sense and sparkling to the eye; a mirror over which Iris may bend and reflect herself, and her three primitive colours, as graces, commingle in harmonious combination; but is it not an amazing fact to hear these spouts at work in the dark and dreary winter's night, as I have heard them shudderingly, for to see them is impossible? In the foggiest of November nights there they are wasting their energies, no one to witness their efforts. I am constantly passing them by at all seasons. You will see them—if you go near for that purpose, to satisfy yourself of the preposterous fact—sometimes as late as ten or eleven o'clock at night sending up superfluous wet into the air already overcharged with a week's rain or drizzle · at other times they play up into the foggy atmosphere, itself so moist that the jet at its top loses its form, and becomes absorbed, and as it were diffused off into the neighbouring air. Sometimes a cloud or steam-like exhalation hovers over them, as the stream is drearily blown out of the perpendicular, by the chill night wind, and the vapour seems unaccountable until you recollect that the fountains are but the embouchures, or kind of waste-pipes, to the Baths and Washhouses for first and second-class bathers and washerwomen, in a back and obscure quarter, which furnishes the lesson of wholesome humiliation to the too great triumph of Trafalgar-square, and exhibits the filthiest sight, to contrast with the so-called, and falsely so called, "finest site in Europe." You find the water still warm, if you have strength of mind or curiosity enough to dip in your finger; and you now see the foundation for one of the mistakes of the French *feuilletonist*, who asserted lately, we were so emasculate and luxurious, that we boiled our water before we let it issue from our only two public fountains. While this has been the state of the case for many winters back, and is so every night — was so, certainly, last night and Monday night, and Saturday night, February 6, at ten o'clock, with the thermometer at I know not what below freezing point,—while this, I say, has been the case at these periods, I have often seen these same eccentric, whimsical, and unaccountable structures sending forth only a dribble, or on a kind of half-cock, or altogether dry, on a panting July day, in blazing noon-tide. The same month you will find invariably chosen for the cleansing out of the basins: you will see the filthy water let off, and men wading in mud-boots breaking through the crust the sun has already formed over the pestiferous deposits precipitated to the bottom, and thereby disturbing it into a thousand vile odours. You will be aware of this underlying surface giving faithful moulds of the rotting forms of all the unclaimed domestic animals of the vicinity, together with the rejected tobacco-pipes, broken bottles, stones and brick-bats, and other elegant extracts lately belonging to the two extensive and flanking cabstands on either side of the square, as well as every variety of lost properties belonging to the races of charity and other ragged boys, and brigades of shoeblacks and crossing-sweepers, who are constantly practising their gymnastics, and striking acrobatic attitudes, on its stone border.

While on this subject, I may as well register what I have often thought as to how much better it would have been had these basins been smaller in their dimensions, and especially of a more simple design. The present many-sided and complicated ground-plan can only be comprehended from the conjectural region of a bird's-eye view, and is a perfect puzzle to a pedestrian. What a mistake, too, was made in covering the square with that failure, asphalte or concrete, smashed as it now constantly is, requiring much renovation, and retaining in its undulations and shallows the wet from the spray and the leakages from the water. How much better would have been the simple and old-fashioned integrity of the large paving-stone, which lets the water off through the interstices, and recalls the old pavements round the old fountains of all the old Italian cities!

R. A.

SCHOOLS OF ART.

The Sheffield School.—A *conversazione* was held at this school, on the 2nd inst. when a large assemblage met, under the presidency of Mr. Monckton Milnes, M.P. A collection of pictures and works of art had been got together by Mr. Young Mitchell, the master of the school, the former being loans and the latter supplied from the Government collections. Mr. Cole, C.B. was also present, and prizes were distributed to the pupils. A very able address was delivered by Mr. Milnes, which is reported, along with the other proceedings, &c. at length in the *Sheffield Independent* of the 6th inst. In course of his remarks, the chairman said, "It is a great blessing for any nation to know that the worker and the thinker may be the same man. And this I believe to be especially realised in art, in which the thought of the individual is presented in a sensible object, and in which the artisan himself shows that he is peculiarly the thinker. Therefore it is that it is most advantageous for all young men employed in mechanical and monotonous labour for a great portion of the day, to be able to devote some portion of it to an operation in which they are enabled to apply the ingenuity of their handiwork, and, at the same time, to apply the highest gifts of imagination and fancy with which Providence has endowed them. Thus it is, ladies and gentlemen, that you will see in times of the world in which art has been the greatest, those men who have succeeded in it the most, and who have left the greatest names to posterity, have been themselves real hard workers, and not in a great degree dilettantes and amateurs. Perhaps there never was a harder worker than Leonardo da Vinci, who was, besides a great artist, an anatomist, a botanist, and had a practical knowledge of all things he represented in art." Mr. Cole characterised the Sheffield school as one of the largest and most successful in the kingdom. He congratulated the meeting on their having exhibited on the walls not less than 2,000*l.* worth of works of art, their own property, from the Kensington Museum. He complained that Parliament was so stingy as to vote only some two or three thousands a-year for such specimens. The Sheffield students, he feared, were capable of executing works which the public at large were not capable of appreciating. The remedy for this was not to limit the education and influence of schools of art to artisans, but all should endeavour to benefit from them. If he were a despot, he would inflict the penalty of subscribing 10*s.* a year on every lady, and 20*s.* a year on every gentleman who could not go through such a drawing exercise as was now given to every parish school-boy.

The Birmingham School.—The annual meeting of the donors and subscribers to the Birmingham Society of Arts and Government School of Art was held in the Society's rooms, New-street, on the 4th instant, Mr. C. R. Cope in the chair. After alluding to the liberal support of Government to art education of late years, Mr. Cope remarked that, during the present session, the school would be removed to a suite of rooms appropriated to their use in the Midland Institute building. Another change would be received with regret by all the pupils, namely their head master Mr. Wallis's retirement. The committee had looked with great satisfaction upon the advancement of the pupils under Mr. Wallis's care. The secretary, Mr. Jagger, then read the Report, which described the position of the Institution as highly satisfactory. The aggregate number of students (1,325) had been greater than in previous years. During the year ending June, 1857, there were 254 of the male students engaged in special trades, and 83 in trades where drawing was of great value. 4,938 students had passed through the school since 1843. In the room of Mr. Wallis, Mr. Rambach, late head master of the School of Art in Cork, had been appointed.

The Newcastle-under-Lyne School.—The annual meeting of this school was held in the Lecture-hall of the Institute on the 2nd instant. There was a crowded attendance, many being unable to obtain admittance. Mr. William Jackson, M.P. occupied the chair. The report announced a very considerable increase of students. On the 31st of December, 1856, the number on the books was 15; in 1857, 47: showing an increase of 32. The classes of persons receiving instruction were,—school boys 20, pupil teachers 8, clerks 6, school girls 6, undetermined occupations 4, governesses 3, bookbinders 3, joiners 2, stonemasons 2, house-painters 2, cabinet-makers 2, wood carvers 2, pawnbroker 1, draper 1, frame-maker 1, pottery turner 1, ironmonger 1. The total number of persons taught by the master in the central and public schools in 1856, was 100; in 1857, 203. The expenditure for the past year amounted to 73*l.* covered by the receipts.

A School for Bridgnorth.—On the 4th inst. a meeting was held in the Assembly room, in the New Market-buildings, Bridgnorth, in furtherance of a project for establishing, in connection with the Borough of Wenlock Schools, a Government School of Practical Art in Bridgnorth. After addresses by Mr. T. W. Wylde Brown and the Rev. W. K. Marshall, a lecture on Art-Education was delivered by Mr. James Milligan. After pointing out the importance to builders, mechanicians, and others, of being able to represent their own ideas by drawings, and to understand such representations when made by others, he alluded to the moral benefits resulting to children from drawing. Learning to draw also gave facility in writing. The acquisition of sound art-knowledge amongst English workmen, especially architectural decorators, was of the greatest importance, and the superiority of English to continental designs was strikingly apparent in the Great Exhibition of 1857. In neglecting drawing as an educational and moral agent, we were less wise than the ancient Greeks, who ordained, 2,200 years ago, that all their free youths should be instructed in the art, though they forbad it to their slaves. In conclusion, the lecturer expressed a hope that a school would be forthwith established in Bridgnorth. A resolution that a School of Art should be established in connection with the Institution was unanimously passed.

The Schools of Art generally. — From a statement recently made by Mr. Cole, it appears that the number of schools of art throughout the United Kingdom at the present time is sixty-nine; and according to the last returns they were the means of educating upwards of 35,000 students in drawing and painting. These numbers include children in poor schools under instruction in drawing. Since the schools of design were expanded into schools of art, and made to embrace the teaching of drawing in public schools, the progress has been as follows:—In 1851, 3,296 students learning drawing cost the state 3*l.* 2*s.* 4*d.* each: in 1856, 35,000 students cost about 15*s.* each. But this number is really insignificant, being a trifle more than one in 1,000 of the population; and it is disheartening to feel that according to the present state of public feeling for art, perhaps half a century must elapse before every mechanic will have the means in his youth of acquiring those elementary principles of art which would improve the daily work of his future life. The Library of Art at South Kensington is now made the circulating library for the whole of the United Kingdom, and every school of art has the privilege of borrowing the most valuable books, prints, &c. upon the single condition of guaranteeing their safe and punctual return.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

NATURAL FOLIAGE AND CARVED DECORATION.

At the ordinary meeting on the 8th inst. Mr. Robert Kerr, Fellow, in the chair, a letter from Mr. E. Barry was read, conveying the best thanks of Sir Charles Barry for the kindness which prompted the resolution passed at the last meeting,* and his regrets that the state of his health prevented him from writing his own reply. "He begs me, however," the letter continued, "to assure you, and, through you, the gentlemen who passed the resolution, that he has received it with feelings of the highest pleasure, as expressing a kind and generous if too partial estimate of his greatest work, by those who, from professional experience, are most competent to appreciate and sympathise with the many anxious labours of an architect."

Mr. James K. Colling then read a paper on "Natural and Architectural Foliage," illustrated with numerous drawings.

* "That this meeting desires to convey to Sir Charles Barry, through his son, Mr. Edward M. Barry, whose admirable description of his father's greatest work they have this evening heard, an assurance of their profound admiration of the zeal, energy, taste, knowledge, and capacity displayed by him in the creation of the great national work he has now brought to a proximate conclusion. It desires to offer him their sincere congratulations upon this occasion, and to express the hope that, with renewed health and strength, he may long survive to receive the honour and respect to which he is so justly entitled, not only from his professional brethren, but from the public at large."

The Chairman said the subject was a very interesting one, especially at the present time and in the present phase of architecture, which depended so much on a proper comprehension of the picturesque. There was nothing in Nature which exhibited so much the manifest intention of the Designer as foliage and flowers. The beauty of the landscape was a matter we might almost say of accident: the beauty of the leaf and of the flower was a matter of the deliberate design of Deity, for the purpose of producing in the mind of man the special and precise effect of pleasure. It therefore followed among all the works of Nature that such works as these were most valuable for our use and edification in the operations of artistic copyism, because the Divine hand in the formation of such things as foliage and flowers was carrying out that very process in its simple and natural form which the artist was carrying out for the contemplation of men's minds in its more purely artificial form. If we considered what was the purpose of the Divine Designer in the formation of foliage and flowers, we should find at once it was that of variety and beauty. Now, variety in respect of foliage was, as in everything else, a matter of irregularity based on a system of regularity. The reader of the paper had already pointed out that all natural productions were based on what he properly called geometrical principles, and that the figures of foliage and flowers were really based on geometrical forms. But there was another principle also at work in the products of Nature,—for this regularity was moreover called out with invariable and inevitable irregularity. It was well known that we were accustomed to say in our school days that there was not a straight line in Nature; so also it might be said there was not a perfect thing or form in Nature. There was the intention to create perfection, but there was a certain peculiarity of swerving or departing from the perfect, which resulted in producing the picturesque. There were two principles observable for our study,—that of regularity and irregularity. And there were two kinds of design in architectural matters that corresponded precisely with these two principles. There was, in the first place, the Classical, or severe school of design; and, in the second, the Mediæval or Gothic, or picturesque school of design. The picturesque had variety, with less of regularity or unity: the severe had unity, with less of variety. He need not say that if we adopted the natural form of foliage and flowers, it was necessary to a certain extent to conventionalise or to artificialise them; but it was more necessary in the picturesque, seeing that Nature herself produced the picturesque in foliage and flower. But we never need produce the severe in foliage or flower, inasmuch as the most beautiful of geometrical forms could not possibly surpass the perfectibility of Nature. Therefore, the student of Classical architecture in the present day,—he would not say the student of the Renaissance, but of the severe or Classical style,—would endeavour with respect to foliage to conventionalise his geometrical forms, just as the student of the picturesque would adopt the forms of Nature, and thereby give an impress to them of greater variety and beauty. It was a matter the reader had not mentioned, as to whether colour could be introduced at all in architectural carving. It was only necessary manifestly to say that it could not, inasmuch as coloured sculpture became nothing more than wax-work, just as coloured foliage or flowers would really become like wax-work in similar productions of natural flowers. It was not really sculpturesque. He could not, on the first occasion of occupying that chair unexpectedly, allow an observation made by the reader of the paper to pass, to the effect that the architecture of the present time would puzzle the future antiquary. That would not be so by any means. That which was genuine,—and he, for one, believed that that which was the genuine architecture of the period was a very different thing indeed from that which most of their friends present might consider as belonging to the various schools of general architecture,—that which was genuine, he repeated, would form emphatically the architecture of this period, and this nineteenth century would have its architectural epoch as well as other periods. We had commenced with the revival of art in Italy, or, in point of fact, with the recognition of the modern art of Italy in the fifteenth century, and of the Renaissance, and we were continuing to carry out that principle and style until another great principle and style should arise to overthrow them. We were not copying, we were not imitating,—at least, we ought not to be. We were carrying out the Italian style in its various phases, and in the natural and legitimate style of that period. And he hoped to see the Gothic architecture of the present day ever coming nearer and nearer to the style of treatment and the Italian style of past times. Mr. Colling had explained the geometrical forms of foliage and flowers as applied to architecture very creditably, and the lesson to be derived from the principle involved must be patent to every mind, namely, the study of the anatomy of botany, which had to deal with the forms of foliage and flowers, and which, for architectural purposes, was well worthy of study. The paper did not profess to exhaust this subject, which might be advantageously studied, with time and inclination. The anatomy of botany gave us the principles on which Nature designed foliage. There was a law in this as well as in everything else. We were not able to dive into the depths of the principle, but we might easily discover the governing principles connected with their forms and figures. Now, Nature was infinite in its variety. Infinity was, of course, an idea at which the mind recoiled and overstepped itself; and we at once saw that if Nature placed before us in foliage and flowers the infinite in variety for our study and imitation, it was clear that there was an ever infinite field open for our progress and pursuit, and, without plunging into metaphysics on the subject, he might say that no one would find the matter of botanical form otherwise than exceedingly rich in respect of variety and design. The study of the anatomy of botany was one of those things which tended to produce a spirit of originality in sculpture and carving, and in doing this it would be found that there were two things that were very different, namely, carelessness and originality. Carelessness never would make originality, and originality was only to be attained by increased study and care. The great end and aim of all study should be, not to produce mere copyism, but to develop those principles on which genius would base its own originality.

Mr. Colling considered that Gothic architecture embraced both the picturesque and the symmetrical. In most of the illustrations he had exhibited that evening, there was displayed, as far as the flat ornament went, a symmetrical and geometrical arrangement, which was quite as good if not better than the picturesque; and if in Gothic architecture the same principle was carried out in any noble building, he considered it would answer and serve that style of architecture quite as well as the Classic; moreover, he thought that there was one advantage in Gothic, namely, that it embraced both the regular and the picturesque.

Mr. C. H. Smith rose as the representative of a body of men of whom a great deal had been said, namely, the carvers; and as he claimed to be a legitimate carver himself, he wished to say a few words. First, with reference to Southwell Minster, it was not generally known that the examples there had been used, and imported into the Houses of Parliament. When Sir Charles Barry and he were at Southwell, they paid particular attention to these identical ornaments. The opinion of architects was somewhat different on this subject. Some said it was very badly done, considering the wonderful size of the carving; others that it was amazingly flat on the surface, and that there was no feeling in it. During the last thirty years he had had a great deal to do with different architects of great celebrity, in the manner, method, and practice of architectural carving. On one occasion he was quite amused on going to the offices of some of our principal architects, with the drawing of a carving in his hand, for some admired and others condemned it, just as each one blamed what the other did. He had probably carved more Corinthian capitals than most people, but he never did one yet without a minute drawing of it, though he had to execute the Corinthian capitals of a celebrated building in London, lately much talked about, without drawings of any description. In the case of the Corinthian columns that were executed in connection with the building to which he had alluded, there was a most extraordinary projection of the pilasters in some of the capitals over the shafts, to which he drew the attention of the architect, who said he did not know anything about it, but added, "Have you got Stuart? Do not show me any more, but go and do your work." He, Mr. Smith, mentioned this in order to show that the practical operating man was not always to blame in these matters. These capitals, seven or eight of them, were finished and put up, and to his astonishment, the architect came to him and told him afterwards that there was too great a projection of the pilasters, and that they must be altered, which he, Mr. Smith, told him was impossible, and so they remained. [Being asked to name the building, the speaker said the National Gallery.] Any one who paid a visit of inspection, could not fail to remark how, in respect of the pilasters, some of them differed from the others. It was very rare that an architect gave his work to the carver to do without models, and he, Mr. Smith, found that the public and the architect were most pleased where architects interfered very little with the carvings. But if there was a great deal of variety in that department, it would be impossible for the architect to provide drawings for all the ornamental carvings. Would it have been possible for Sir Charles Barry to have furnished all the drawings for the decorations of the Houses of Parliament? It was generally supposed that the capitals of the National Gallery were taken from Carlton House, whereas only a portion of the capitals of the portico of old Carlton were used, and they cost more money to repair for the purpose than the new capitals cost. The answer was that they could not throw such discredit on this present from William IV. to the National Gallery, as to throw them altogether aside.

Mr. Digby Wyatt, in proposing a vote of thanks to Mr. Colling for his interesting paper, said he felt it to be the more interesting when taken in connection with the paper read at their last meeting, by Mr. Barry, on the Houses of Parliament. No one could have heard of the Houses of Parliament, and of the extensive operations that were carried on there, without recognising how very important a school had grown up among us, principally through the instrumentality and superiority of the skilled workmen connected with that building, in the trade or art of carving. The exact direction that that might take was one of those things more likely than any other to have a powerful influence on that style of architecture which we were about, he anticipated, to inaugurate in this country. On the completion of these Houses of Parliament, an immense number of workmen, of considerable ability, were scattered about the country, to work in parish churches, and in Gothic structures of all kinds, and their distribution in this way, and the development that they must consequently bring about in sculptural acquirements, must, he thought, tend to do us great credit, and to make up the bulk of our fine art for the future. Seeing, too, that a great deal of work is left to their actual design, there would be a great want of them, particularly in country-places: consequently it became important that principles should be recognised which should serve to a certain extent as a guide to them in architectural carving. No one would fail to feel that the normal principle in nature was regularity, and he thought it was decidedly proved by the perfection of regularity being the test of the health of the plant. The moment disease occurred in a flower that moment you observed that one portion of it went out of its regularly established form, and this was one reason, in his mind, for believing that regularity was one of the first principles. But he thought that a second principle consisted in the continual effort that appeared to be engendered by a too rigid adherence to regularity. The way in which gravity acted on the parts of a flower, presented a counter-check to this rigidity of form in the beautifully diminishing ratio of the way in which the leaves sprang from the parent stem, flowing out, and following not in strictly geometrical divisions, but in a regularly diminishing ratio of spirals, as far as the portion of the leaf itself; while the way in which the branches sprang out in the leading ramifications of the tree was most irregular, as if to make a purpose and a virtue of variety, and to avoid a too great rigidity in the geometrical parts of the minor portions. This was one of the principles to which we, in designing, should always adhere, namely, to endeavour to contrast certain portions of the geometrical regularities with others in which the fancy of the artist had a more dominant sway. The introduction of the regular spiral, which we did not recognise in nature to a very great extent, was one of the most beautiful balances of the leaves, based on the more simple geometrical figures; and he thought it was by the adoption of these general principles, in connection with more direct imitation,—that was to say, by a closer adherence to geometry of parts,—that we could obtain the best effect in foliated arrangements. When we looked at the efforts of a tyro in design, we found that his first idea was to make things balance. He put up a centre, and a support on each side, and raised a rude geometrical figure as his first impulse; but directly he got a little further, he perceived that that was an easy and a commonplace thing, and varied it in all sorts of capricious fashions, until he lost the design by his escape from this first simplicity; and then, when he became a really perfect man of composition, he adhered to rigid regularity, though there was a constant endeavour to conceal it. Thus all good paintings, particularly those of Raffaelle, were based on simple geometrical figures; but, by dexterity in the disposition of light and shade, and of other geometrical figures, there was brought about, so to speak, a constant hiding of the first intention, and the spectator was pleased with the regularity obtained, without being able to ascertain how it was obtained, and in this consisted one of the most skilful of the arts of design and composition. In this way the artist imperceptibly imitated nature, and did not bring himself as the artist too conspicuously forward. Another important point in the consideration of this subject was the precise extent of imitation to which sculptors in particular should go in the imitation of natural objects. If they imitated too closely, and if it was in any material that was at all like the material in which they were working, it became disagreeable. To imitate the trunk of a tree in oak carving was a sort of falsetto that shocked you directly; and to imitate rocks in marble was another objectionable thing; but a close approach might be made to direct imitation where the enclosing forms are of a strictly architectural character, and that was one of the reasons why the foliage at Southwell was so exceedingly pleasing, more particularly in those parts that were most fanciful and most close to nature, and for the way in which the groupings and the leaves were thrown about, intersected by a fine projecting roll of mouldings that separated the one from the other, and which almost convinced you that it was architecture you were looking at, and not a bunch of leaves. Another condition on which you might approach very closely to Nature, in direct imitation of her, was when the scale of the work of art was very much less than the object imitated, because you saw at once that it was a work of art, and not a mere portrait. It lost its servile character; and if, in architecture, we were to insist too largely on convention, we should do away with one of the greatest happinesses of art, for when an artist felt he had a beautiful object before him, he felt an intense pleasure in imitating it, and that pleasure, in turn, was conveyed to the spectator. A most beautiful example of this kind of imitation was the bronzework and leafing, and the little birds, round the second gate of Ghiberti, at Florence. There the bean and the different plants were all done in the most minute detail in the texture of the foliage itself, and not by the severity of the enclosing lines, or by trespassing on the architectural features, there being only so much of enriched moulding as not to appear too much; and yet it was impossible to imitate nature more fancifully or playfully. There was not a plant that did not retain its perfect geometry of structure, and in that respect harmonized with what was consistent in nature. With respect to the application of colour in sculpture he must a little join issue with the chairman. He quite agreed with him that polychromy was inapplicable in sculpture where applied in such a way as to interfere with the leading or dominant lines of the composition. In the arrangement of ornamental coloured sculpture, specific rules should be observed. If you had an undulating line in one direction, and intersected it at another, the intersection occurring at regular spots, of course there was no objection to have the two lines in two different colours; and supposing you wanted to place an ornament in the different parts of the spaces formed by these intersecting lines, you might do it in different colours, so long as you distributed your colours at intervals, and gave the effect of regularity by the operation.

MONUMENTS.

Havelock.—Government has agreed to grant a site for a monument to the late General Sir Henry Havelock. The monument will be erected on the opposite side of the Nelson column to that of Sir Charles Napier's statue, and will consist of a full-length statue of the late general. The names of the regiments and of the officers who accompanied him through the memorable struggle at Cawnpore and Lucknow will be recorded on the base of the monument.

Hume.—At Montrose a meeting of the committee of subscribers to the Hume Monument for that town was held on Wednesday in last week, when the secretary read a correspondence with Mr. Calder Marshall, sculptor, from which it appeared that the artist strongly recommended a freestone instead of a granite pedestal, as more in keeping with the statue, admitting of more ornament, and which could by induration be made to last as long as granite. The meeting unanimously agreed to the suggestion, and remitted to Messrs. Barnes, Foote, and Ross to arrange with Mr. Marshall for a statuary monument to Mr. Hume of the stone recommended, the figure to be 9 feet in stature above the pedestal, and the whole to be executed, erected, and finished at a cost not to exceed 460*l.*

Watt.—We have before noticed the effort which is being made to commemorate the talents of James Watt, the inventor of the steam-engine, by erecting a massive monument at Greenock, his birthplace. This is being effected by novel means, the donations being solicited in kind. During January the following donations were received:—A large stone, from the Mechanics' Institution, St. Helen's, Lancashire, requiring ten horses to convey it from the railway to the cemetery hill; and the following, transmitted by Mr. John Grant, of Malta,—a block of granite, from Sebastopol, presented by the secretary to the Port-Admiral; a stone from St. Paul's Bay, where the Apostle was shipwrecked, quarried there by order of the Governor of Malta; and a portion of a marble pillar from ancient Carthage, presented by Rear-Admiral Sir Houston Stewart. These, along with a few other contributions, have been placed upon the four large corner stones gifted by Mr. Dugald Dove, Nitshill quarry. The foundation of the monument is 40 feet square, and its pillars will guide sailors navigating the Clyde.

TRINITY CHURCH COMPETITION, EDINBURGH.

THE report of the Lord Provost's Committee on the subject of the plans received in answer to the requirement of the Council for a Gothic church at 7,000*l.* states that the sub-committee had selected fourteen of the fifty-eight plans lodged to place before the Lord Provost's Committee, and that, after full consideration, the Lord Provost's Committee, by a majority of votes, preferred the designs numbered 2, 55, and 12, in the first, second, and third place, the mottoes of these being "Octagon," "Trio in Uno," and "The Purity of Protestant Worship," respectively. The mottoes of 26, 32, and 36, being the other three designs recommended by the sub-committee, and selected as next in order of preference by the Lord Provost's Committee, are "In defens," "In hope I byde," and Three Circles. The following are the remaining designs selected by the sub-committee as deserving of special commendation, but without any order of preference:—10, "Fides;" 11, "Auld Langsyne;" 15, "Edina;" 22, "L'Espérance;" 23, "Knox;" 47, "Yerk;" 49, "Excelsior;" and 57, "Regina." The committee opened the envelopes containing the mottoes of the designs preferred in the first, second, and third places, and found that the authors of the several designs are:—

1. "Octagon,"—Lanyon and Lynn, architects, Belfast.
2. "Trio in Uno,"—John Liddell, architect, 11, Albion-street, Hyde-park, London.
3. "The Purity of Protestant Worship"—Philip Brannon, architect, 5, Manchester-street, Southampton.

When the report was read, Mr. Wood asked if the committee had requested the aid of any professional assessors to guide them on the question as to whether the designs approved of could be carried out for the money?

Bailie Johnston said it was strictly provided for in the conditions of competition, that if the plan first preferred could not be executed for the money it should be set aside, and the next in order taken. He stated that there had been a marvellous harmony in the committee in deciding on the plans.

We have received letters objecting to the decision. Eight or nine members of the council dissented from the adoption of the report, chiefly, however, as we understand it, on the ground that the original engagement on the part of the council, when they allowed the old church to be taken down, and received from the North British Railway Company 17,671*l.* 19s. 6d. in respect thereof, is not being carried out.

BANK OF NEW YORK.

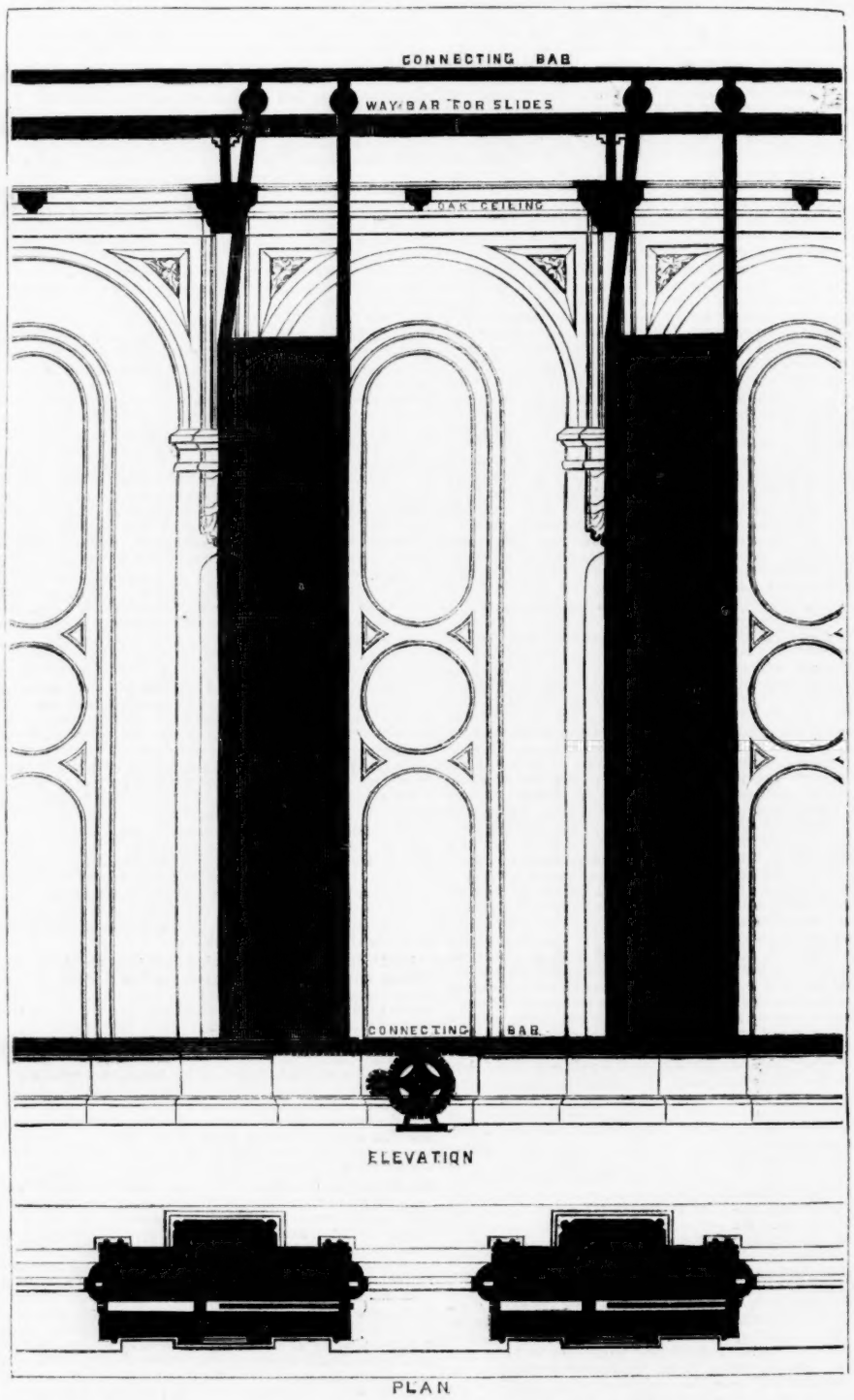
THE building shown by our engraving, has been lately erected by the Bank of New York, at the corner of Wall-street and William-street, on the site of their old building, which was a structure of brick and brown stone, handsome in design, but not adapted to the present requirements of the bank. Wall-street is the thoroughfare of most importance to the money-making part of the city community. The appraised value of the site being 50,000*l.* it was desirable and economical to pull down the old building, which provided no income in the way of rent, and to build up in its place a structure that should supply ample accommodation for the bank, and at the same time furnish a number of rent-paying offices. The building here illustrated, when completed, will cost about 30,000*l.*—and thus, with the site, will be worth 80,000*l.* The rental of the offices will be between 5,000*l.* and 6,000*l.* per annum, and the building will therefore yield an interest of about 7 per cent. on the whole value, and leave the banking department free of rent-charge for the part occupied by itself.

The banking-room occupies two stories of the building, the entrance being from Wall-street, with rented offices of moderate height on each side of the entrance-hall. In the rear are the vault, the cashier's room, and the president's room; and over these the directors' room, with dressing-rooms attached, bringing this part of the building to the same height as the banking-room.

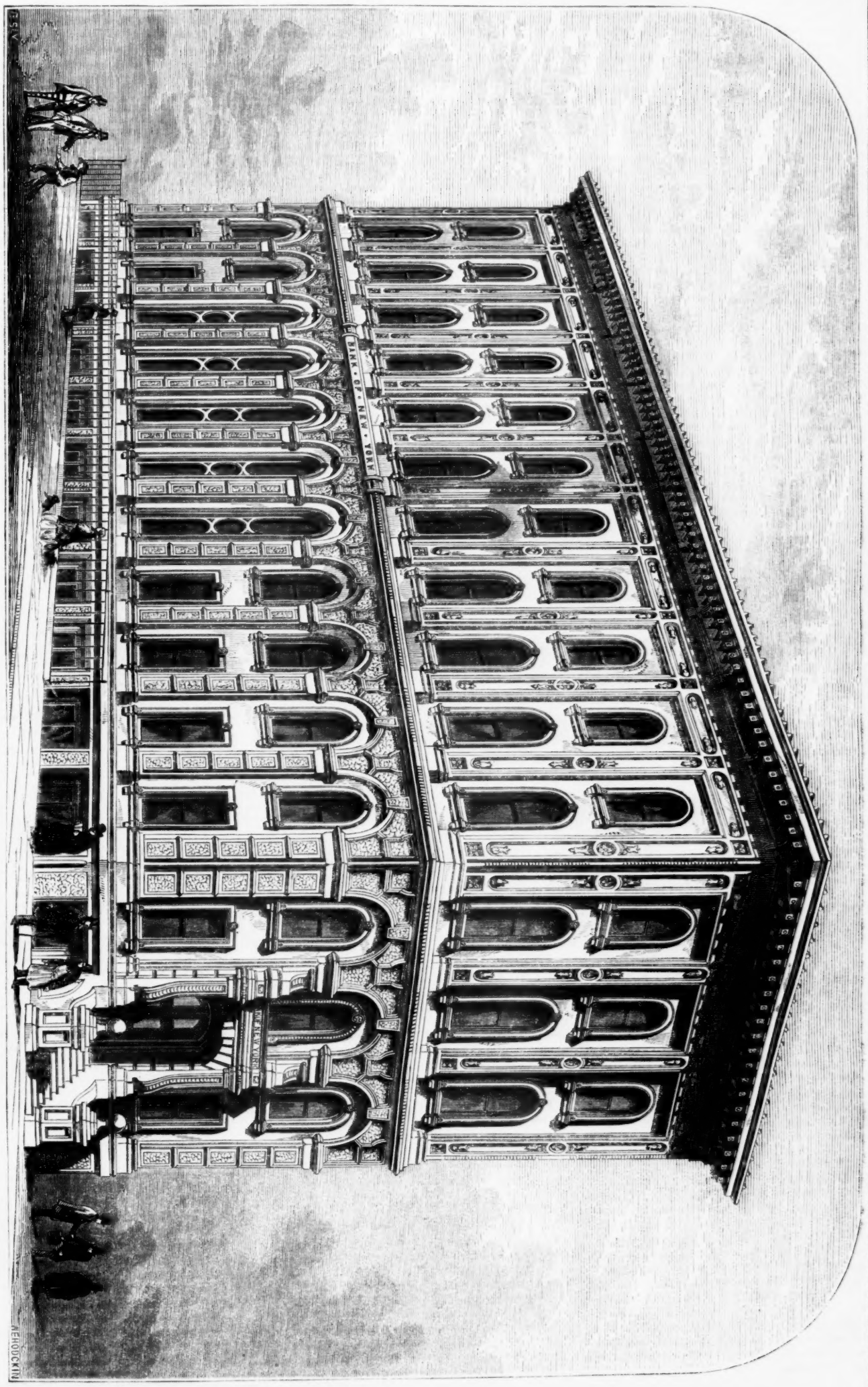
Under the bank department in the basement, is a large book-room for old books and papers; lunch-room for clerks, with dressing-room attached; also a specie-vault and plate-vault, communicating through a lobby and iron door with William-street. Under this again is a sub-cellar, for heating apparatus and coal.

The office suite on the floor immediately above the entrance commands a higher price than could otherwise be obtained for it, from the fact of the staircase being easy, and the principal story being comparatively low; and these two rooms have been let to the United States Trust Company for ten years, at 1,000*l.* per annum. The two connected rooms on one side of the principal hall are let to an insurance company for 800*l.* per annum, and the small office on the other side of the hall for 400*l.* per annum. The uppermost floor is let to the clearing-house, at 600*l.* per annum, and the other offices command rents in proportion,—those in the basement being nearly as valuable as those on the principal floor. In planning the building, it was considered desirable to take the whole width for the banking-room; and as this width of about 35 feet would have been too considerable to allow of an ample supply of light from windows on one side only, an oak ceiling has been introduced, with glazed panels over the dark side of the room, and a well for light, the whole length of the apartment, has been left between this glazed ceiling and a skylight of the same size in the roof above. Ample light is thus introduced on the enclosed side of the building, and the staircase, closets, and corridor, together with one side of the clearing-house office in the uppermost story, have an ample supply of light from the same source. The ceiling lights and roof lights are glazed with small thick glass, in iron burglar-proof frames, and all the partitions throughout are of corrugated iron, with iron laths. The beams and girders are of iron, with corrugated iron laid between the same, and filled in with concrete. The iron shutters to the banking department are all connected together; and, being suspended from above, run on large wheels, that traverse a way-bar fitted between the beams on a level with the floor over the banking-room, so that this part of the work may be examined at any time, by taking out the panels under the windows of the offices in the upper floor, without interfering with the Caen stone lining of the banking-room.

These shutters, shown in our illustration, finish below with a grooved cap, working with three-quarters of an inch play on a guide-bar below, and are all turned by one crank quite easily,—the main room, cashier's room, president's room, and directors' room over, being thus closed up simultaneously by a process that is too simple to get out of order at all readily. The inner Caen stone wall was built on the window side of the room after the shutters were fitted, the other three sides being carried up with the building. The exterior is of red brick and brown stone, and all the works have been carried out under the superintendence of Mr. Calvert Vaux, architect, from plans approved previously to a dissolution of his partnership with Mr. Withers.



BANK OF NEW YORK.——*Elevation and Plan of Suspended Iron Shutters.*



BANK OF NEW YORK.—MESSRS. VAUX AND WITHERS, ARCHITECTS.

THE FITTINGS OF HOUSES IN THE MIDDLE AGES.

TOWARDS the close of Mr. J. H. Parker's lecture on the Domestic Architecture of the Middle Ages at the Architectural Museum, mentioned last week, the lecturer said:—

I am perhaps departing from the strict letter of the subject in saying anything about furniture, but as the bare walls of a modern house give a very inadequate and uncomfortable idea of a modern dwelling, so is this equally the case with the dwelling-house of the Middle Ages; and yet most people form their ideas of these from the bare walls only, and come to the conclusion that they must have been very wretched, uncomfortable places, which I believe to be very far from the truth.

To begin with the hall, as the principal dwelling apartment, where large parties were assembled. The walls were hung with tapestry to the height of 8 or 10 feet from the ground: above this the walls were painted with foliage and figures, often with subjects taken from the popular romances of the day, or hunting scenes, or sometimes legendary or Scripture subjects: similar subjects were worked upon the tapestry, so that when the colours were all fresh there was little distinction between those parts of the walls which were hung with tapestry and those which were not. The windows, also, were filled with painted glass, containing similar subjects, and forming a continuation of the paintings on the walls, or the work of the needle in imitation of paintings. The best example we have remaining of this arrangement is in St. Mary's Hall, Coventry, where the tapestry and the painted window over it, at the high end of the hall, behind the dais, remain perfect, though faded. They are of the time of Henry VI. and record a visit of that monarch to Coventry. In several other instances the gables at each end of the hall are filled with windows, the buildings attached being considerably lower than the hall.

To provide for sufficient warmth, I have mentioned that a large fire of logs of wood was made in the middle of the hall, on a brazier with fire-dogs, around which forty or fifty people might be assembled and yet feel the benefit of the warmth: the smoke, escaping from the louvre in the roof, passed above the heads of the people. This custom was continued in the hall of Westminster School until a very recent period, having only been altered by Dean Buckland. It was also continued in the hall of Lincoln College, Oxford, within the memory of some of the present fellows, and the smoke-louvre in the roof still remains. I believe it is also still the custom in the hall of St. John's College, Cambridge.

But as the smoke must have frequently been injurious to the paintings, we commonly find in the richer halls of the fifteenth century fireplaces introduced—sometimes only one, as at Haddon Hall, Wanswell Court, and very many others; often two, and these placed usually on the same side of the hall, as at Kenilworth, and numerous others: sometimes there were more than two, as at Conway; though it is difficult there to tell exactly how far the great hall extended, and where the partition-screen of the chapel was placed which formed one end of it. At Linlithgow there are two large fireplaces close together at one end of the hall, behind the dais, probably because the climate was cold and damp (and perhaps because the princess, afterwards known as Mary Queen of Scots, whose father built this palace, was a delicate child, and required more than usual care). The fireplaces in Scotland are generally large and fine, and resemble the French flamboyant fireplaces with their magnificent hoods.

The tables—both the high-table on the dais and the side-tables in the body of the hall—were long and narrow, being merely boards placed on trestles, and removed when not required for use. The word "table" properly signifies the same as the Latin word *tabula*, a board, and does not include the trestles, or the legs, or framework on which the table rests. These tables appear to have been generally used on one side only, the people in the body of the hall sitting on benches, the grandees at the high-table on chairs, and the lord in the centre, on a sort of throne, or chair of state, with a canopy over it—at least, if we may trust the illuminations in manuscripts of the period, as I believe we may, though some persons consider them so entirely conventional that no reliance at all is to be placed upon them. A few of these state-chairs have come down to us: perhaps the Coronation-chair in Westminster Abbey is the most beautiful, and although it is in a shamefully neglected and mutilated state, having been evidently used merely to nail the velvet coverings upon, yet the original carving and gilding, and painting, with the diaper-work, can still be made out with care.

In the recess of the bay-window at the end of the dais was the sideboard, or cupboard, on which the plate and china were displayed on shelves. The dais itself was often covered with a carpet, and the chairs had cushions on the seats, and dorsars at the back:—these seem to have been thin cushions or pads hanging over the back of the chair. The table was covered with a linen cloth, and napkins were provided for each guest. Water was brought round before and after meals to those at the high-table in lavatories, which were small basins of silver or metal richly enamelled, about the size and depth of a soup-plate, but with a spout to pour out of, and which were often filled with rose-water: those in the body of the hall were expected to wash their hands at the lavatory provided for that purpose behind the screen at the lower end of the hall. The dais was commonly boarded, but the floor of the body of the hall was covered with tiles, or sometimes paved; or earth only, and was strewed with rushes, which were frequently renewed. At the lower end of the hall, over the screens, was the music-gallery, which was occupied by the minstrels during meals; and from this there was often a door to a room at the back. The bed-rooms were well furnished with bedsteads and bedding, as is proved by the numerous inventories of furniture which we have remaining, as well as by the illuminations. We find mention of silk curtains, feather-beds, mattresses, and flat cushions to be placed against the wall at the back of the bed. The bedstead served as a couch during the day to sit or lounge upon, the same chamber serving its occupant both for bed-room and sitting-room, as is still the custom in France. The floor was usually covered with tiles, or with a kind of mastic, as at Bolton Castle, Yorkshire, which is not cold or uncomfortable to the feet.

Small carpets, like what we now use as bedside carpets, were in common use, and the quilt or covering of the bed was often a richly-worked piece of tapestry or needlework. But chairs appear to have been scarce articles, as we read frequently of people sitting together on the sides of the bed. In the place of our chest of drawers there was a chest of a different description, often richly ornamented both with painting and with well-wrought iron-work. There was also a shelf to put books upon, or for any other purpose. In each bed-room there was a fireplace, and attached to each was a garderobe, either in a turret or in the thickness of the wall, with a passage leading to it.

In the kitchen and offices there was no lack of the utensils necessary for carrying on the work there required. The inventories of the period enumerate all sorts of conveniences,—boilers and kettles, and stewpans and frying-pans, and gridirons, tubs, vats, barrels, and everything wanted for the bakehouse, the brewhouse, the salting-house, and other offices.

Thus it will be found, upon careful investigation, that with all our boasted improvements and advances in the march of civilisation, so far as comfort is concerned, the country-house of the Middle Ages presented as many luxuries to those who inhabited it as a modern house does to ourselves, making some allowance for the wants of a less effeminate age, which did not require all the little delicacies and refinements of modern usage. We are often too ready to look back upon the Dark Ages, as we love to call them, and fancy that because we do not at first sight find proofs to the contrary, men must have lived like cattle. If, however, with the evidence we have collected, we can look back, in imagination, and transport ourselves, for instance, into one of those old halls at Christmas time, with the yule log blazing on the hearth, sounds of music pouring forth from the minstrels' gallery, of merry laughter from the vicinity of the jester, and of dancing with thorough goodwill in another part, we should see a scene of warmth and comfort which may well bear comparison with the refinements and the stiffness which civilisation often imposes on our modern drawing-rooms. It is too much the fashion to despise our ancestors for what they had not, instead of taking the trouble to examine what they had. We are often too conceited to copy or to learn from past ages, but seek after some new and taking invention, which, after all, perhaps, if we had searched diligently, is no invention at all, but something that was common in those ages which we call dark, but which will be found not unworthy of the attention of an age that prides itself on the advanced state of its arts and sciences.

MR. SCOTT'S SECOND LECTURE ON ARCHITECTURE AT THE ROYAL ACADEMY.*

IT is exceedingly vexatious that the dates of buildings of this period [twelfth century] are so difficult to be ascertained. Even where we know by whom they were erected, their founders were often so long-lived, as to render the information perfectly indefinite. Thus, Pudsey presided over the See of Durham for forty years, Roger over York for nearly thirty years, and Henry de Blois over Winchester for forty-two years, and Walkelin de Ferrers, who built the Hall at Oakham Castle, held the Manor from 1161 to 1201.

Among the later works of the transition, may be mentioned the eastern part of Chichester Cathedral,—a most beautiful example, of which I give an internal view; and a yet nobler specimen is the eastern portion of Tynemouth Abbey. Of this I give a restored view, in which I have supplied one of the bays which have fallen, and also the vaulting, with its curious termination against the east end. This, again, is a dateless work. Though, externally, the flat Norman buttress is retained, it possesses internally no Romanesque features, but is purely pointed and thoroughly developed in every part, though retaining what in England is the great distinguishing characteristic of the transition,—the square abacus. The details are exceedingly rich and beautiful, while the vast thickness of its walls gives to the interior a massive grandeur seldom equalled. Its situation is ungenial, being on a dull promontory, and close upon the shore, so that every blast from the German Ocean whistles through its arches; yet, chilling as its position is, no one of taste can visit it without finding his heart warm up with admiration of its noble and beautiful architecture, which is excelled by few if any examples of its period.

In the same northern district is Hexham Abbey, a noble example of what may be called the *transition* from the *transition* into the developed early English. Further north, again, we have noble examples at Kelso, Jedburgh, and Dryburgh. The first having the round arch nearly throughout; the second, as I have before said, famed for its exquisite doorways; and the last having doorways equally refined, but remarkable rather for their chaste simplicity than for their richness of detail. I ought also to mention, among other northern examples, the Abbey of Turnes, and the Sister Church of Cartmel,—also the noble refectories at Fountains and Rivaux.

To attempt, however, an enumeration of English examples, would be an endless task. So far from being a mere exotic, the country appears to have been absolutely saturated with transitional buildings; and these, so far from showing any of that inaptitude which would accompany the use of a mere imported style, actually evince a degree of originality and a revelry (if I may use such a term) in the new art which is perfectly charming; and display beauties wholly different from any I have seen in other countries. Not only is this the case in works on a grand scale, but in the smallest village churches, in which we find the style reduced to its simplest elements, yet exhibiting a sense of beauty and a studious attention to detail which is quite surprising. One of the features of these simpler productions is the plain unfoliated capital, such as those at Roche Abbey, but which from its simplicity is of frequent use in village churches. Nothing could be more severely plain—yet it possesses a degree of beauty equal, in its way, to that of the most gorgeous capitals. We see from the examples I give from Roche Abbey, from Ripon and Fountains, how this passed off into the round moulded capital which is so peculiar a characteristic of the English Early Pointed.

The distinctive characteristics of the productions of the English as compared with the French transition are somewhat difficult to define, inasmuch as they begin in a manner the very reverse of that in which they terminate;—for at first they evince themselves in a stronger resemblance to the preceding Romanesque, while they terminate in a style differing from it more decidedly than was the case with the perfected early Pointed architecture of France. The early transitional works of the Royal domain of France appear to an English eye more advanced than they really are, because the Romanesque of that district had less of those characteristics which, to our eye, distinguish the style, than those either of England or of other parts of France. The designs of the archivolts, as M. Viollet le Duc says, were sparing in ornament, but liberal in mouldings,—and if we compare early Pointed examples with the preceding Romanesque of the same district of France, we shall find that the changes were comparatively slight. In England the change was at first equally slight, but, the Romanesque being rich in characteristic decorations, it follows that, to us, our early transition appears more Romanesque than that of France. Compare, for instance, St. Cross with Sens: the proportion of round to pointed arches in each differs but little. At Sens even the vaulting of the aisles is round, while at St. Cross it is pointed; nor do they differ much in their relation to the preceding Romanesque of the same districts, as will be seen by comparing an internal bay at Sens with corresponding portions of French Romanesque churches. Yet Sens being absolutely devoid of those Romanesque ornaments in which St. Cross is so rich, strikes our eye as being more advanced. We had, in fact, much more to be got rid of in our Romanesque than they had in and about the Isle of France.

The remarkable converse of this is that at the close of our transition we had not only thrown off this excess of Romanesque characteristics, but had gone beyond the French in altering those of a less palpable kind, and introducing details distinct from those of the preceding style. Thus our arch-mouldings became far more rich and more studied in their profile than those in France, which continued to be little more than the repetition of a roll between two hollows, while ours were composed of numerous and beautiful members;—the proportions of our windows became much more graceful than those customarily used in France, the basement mouldings were better. On the other hand, we were far less liberal in the use of sculpture, and we generated a purely moulded capital, which the French can scarcely be said to possess; thus, if I may say so, giving ourselves the choice of a *Doric* as well as a *Corinthian* variety in our columns; and, finally, we relinquished the square form of the abacus and made our capitals, for the most part, round: so that at the end of our transition we had departed much more widely from our own Romanesque than the French had from theirs; and while the early French transitional works look more advanced than those of a corresponding stage in England, the case is reversed at its close, when the English examples appear more advanced than the French, as may be seen by comparing the interior of the Galilee at Ely with the western portals of Notre Dame, which are of some years' later date.

I will close my outline of English transition by referring to four examples which mark the limits of its duration by showing how soon the true Early English attained its perfect development. The examples I cite for this purpose are the following:—

1st. The choir, eastern transept (and, I believe, the chapter-house), at Lincoln, which were completed by Bishop Hugh before the close of the twelvth century, and which, though of early character, are decidedly not transitional, but developed Early Pointed.

* See p. 99, *ante*. The first lecture was delivered on Thursday, January 21; the second on January 28th.

2nd. The western portals of St. Alban's, built by William de Cella, between the years 1195 and 1205. These are among the most beautiful early English works in the kingdom, and have no Romanesque reminiscences, nor any French characteristics, except the crochet capital, which is magnificently developed beneath round abaci.

3rd. The eastern chapels at Winchester, built by Bishop de Lucy about 1204. These have no striking feature, except that they are pure Early English, and even then suggestions of tracery.

4th. The Galilee porch at Ely, built by Bishop Eustacius, who held the see from about 1195 to 1214, and which is one of the most magnificent specimens of the fully developed style in the country. It has the crochet capital, gorgeously enriched,—not with French but English conventional foliage; while the arch mouldings are filled with the most exquisite foliage of pure Early English character.

Thus we see that, though the French preceded us in the commencement of their transition, our own was, with very trifling exceptions, equally national with theirs; and that it was not only completed as soon, but that it was carried through to a style more distinctive and fully as national as the glorious Early Pointed of France.

On this subject I will only add one remark. Early as were the first French developments compared with ours,—long as was the interval of stagnation between St. Denis and St. Germain des Prés,—many as were the steps between the stages of the transition in both countries, and many more before we had developed out of it that Pointed style we know as the "Early English," with its lancet windows and round abaci,—the whole was, nevertheless, carried through within the period of *one lifetime*. Not only were the transitions of France and England carried on to perfection under contemporary monarchs, but that queen who was present at the consecration of Suger's precocious monument, who caused that subsequent stagnation by her frivolity, and who witnessed the completion of St. Cross during her captivity at Winchester, actually lived long enough to have seen the fully developed Early English of De Lucy's chapels in the neighbouring cathedral.

The length to which my remarks on the French and English transition have been necessarily extended has compelled me to limit what I hoped to have said on that of Germany to a very few observations.

I have already mentioned the extraordinary tardiness of the Germans in relinquishing their much-loved Romanesque. I am not prepared, as in the case of French and English buildings, to trace out the first appearance of the pointed arch, and I have no doubt that there are numerous instances of its use at an earlier date, but there is nothing like a transition into the Pointed arched *style* till the commencement of the thirteenth century, after it had been completed both in England and France. Nevertheless, the German transition is as distinctly natural, and as evident an offspring of their own Romanesque, as that of France or England; indeed, it is so peculiar as to appear at first sight to have little in connection with the architecture of either of the two countries, and is usually spoken of as being only a slight variety upon German Romanesque. Let any one look at a few of its leading productions, as St. Martin, St. Gereon, and a few others at Cologne; the churches at Neuss, near Dusseldorf, Limburg on the Lahn, Sinzig, Gelnhaussen, or St. Mary, at Treves; the western façades at Anderbach, Xanten, St. Sibald, at Nuremberg; and at Halbersdadt, the east end of Magdeburg, or at the representations of the cloisters (now destroyed) of St. Gereon or Altenberg, or at any of the multitudinous list of German churches of the first quarter of the thirteenth century, and he will at once see that they present as natural and logical a transition from their own national Romanesque as the works of Suger do from that of the royal domain of France. The use of the crochet capitals in some of the later examples is the solitary instance of any direct imitation of the already perfected transition in the neighbouring country.

The great misfortune of the German transition was, that it occurred so late that before they could perfect it the French had passed into the second stage of their developed pointed, and had worked out the great problem of window-tracery. The consequence was, that German patience at length gave way; they relinquished their transition just as they were perfecting a pointed style of their own, and throwing themselves almost wholly into the hands of the French, passed at one step from their own curious and characteristic art into the fully developed style of Amiens and Beauvais.

Mr. Fergusson laments this as having prevented the development of a perfect *round-arched* style; but it must be recollected that the round-arched style of Germany had been almost entirely relinquished previously to the succumbing of their national architecture before the dominant star of France. The loss, then, we have to lament is, not that it prevented a more perfect round-arched development, but that it suspended, when on the eve of being perfected, the formation of a really national German variety of the Pointed-arch style; and, though they did much to remedy this, it unquestionably rendered their architecture, for the next century, in some degree, a German version of French style.

I have, however, dwelt so long upon the mere history of the transition, that I have had no time to extract any useful practical lessons from the changes in art we have been tracing out. What, then, are the leading lessons they suggest?

First. They show us how absolute must have been the necessity, in generating a perfect arcuated style, to cast away the slavery,—I will not say of the round arch, for it is one of the most genuine and useful forms,— but of the adherence to one unchanging form in the arch, admitting of no variation in its proportion of height to span, nor any change of form suited to its statical duties, or its geometrical or æsthetical position.

Secondly. They suggest encouragement in the task of working out a style suited to the exigencies of our day, by showing how vast are the results to be anticipated when, not only the artists, but when the rulers, the nobles, and the ecclesiastics of a country thoroughly set themselves to the task with one heart and one mind, and work on together with all their zeal, energy, and perseverance, till they have ensured the great object of their designs. Would that we could see some equivalent effort in our own country and in our day!

In the age we have been treating of, the previous architecture, though in a great degree original, retained elements derived from the degenerated Roman, and others belonging to the ages of darkness and barbarism which succeeded, but, by the efforts we have been chronicling, both these elements were thrown off, and the style came forth like gold purified in the fire,—pure and refined.

Thirdly. We may learn a lesson of *patience* from what we have reviewed. Those of us who have been endeavouring to generate a style on the basis of the architecture of our own family of nations, have been often taunted with the slowness of our progress. Now, it is scarcely twenty years since we set earnestly about the task, and, rapid as the transition in the twelfth century appears, we have seen an interval of twenty years in its history in which we can trace no progress at all; which, with all our deficiences, can hardly be said of us during a corresponding period: let us, then, take courage and press forward, and in spite of temporary discouragement, and, in the end, a like success may terminate our labours.

Fourthly. It has often been spoken of as a vice to be too fond of studying *transitional* styles. This may possibly be true as regards taking them as our models, but I hold the very contrary to be the case as to selecting them as special objects of study. They are the very periods of intellectual energy,—the moments of the most intense effort of the human mind. From them we learn what zeal, what determination, what strength of will, what unity of purpose, what patient perseverance are required in working out a great good. The result of the mighty struggle was, that, freed from every barbaric or lifeless element, our architects commenced the next century with their course clearly open before them, every thing in their power, and no hindrance to the attainment of their object. Would that we could say this of ourselves, whatever may be our views as to *style!*

Fifthly. Then, again, in the style itself of the buildings, we have been considering there is much for us to learn. They possess a masculine grandeur, a noble sturdiness of character, an independence of ornament united with a grateful acceptance of its aid which would supply a wholesome element to any style. A perfected style is often defective in these characteristics. It is toned down to too perfect a symmetry,—a too nicely weighed balance of parts;—the whole may suggest nothing but harmony, yet the parts are too much lost in the whole: there is too much of the satiety of attainment, and not enough of the excitement of the effort after perfection. The first developments of Pointed architecture produce an excitement on the mind which more perfected examples do not give rise to, and it seems to me that they contain elements which we should not do amiss to instil into our own works, as I may have occasion to suggest more practically, if I should continue my course of lectures in this place.

Sixthly. There is something to be learned from the curious history I have traced out of the reintroduction of one classic element,—the Corinthian capital, at the moment when all other relics of the architecture of the whole world were about to be thrown off. It is a kind of parallel to the revival of classic literature at the same period, on which M. Viollet le Duc remarks,—

"It is precisely at the moment when the researches into antique letters, sciences, philosophy and legislation were pursued with ardour,—during the twelfth century,—that architecture abandoned the last remnants of antique tradition to found a new art whose principles are in manifest opposition to those of the arts of antiquity." "Are we then," he proceeds, "to conclude from this that the men of the twelfth century were not consistent with themselves?—quite the contrary—but that which distinguishes the Renaissance of the twelfth century from that of the sixteenth century, is this,—that the former penetrates into the antique *spirit*, while the latter allows itself to be seduced by the *form*."

The Corinthian capital stood alone among the details of ancient architecture, as being founded on principles of beauty common to *all ages*. It was foreshadowed in the works of their earliest predecessors, the Egyptians, and has suggested the forms for the capitals used in all succeeding styles, whether by the Byzantines, the Sassanians, the Saracens, or the Gothic conquerors of Rome. It was, then, consistent that, while about to purge their arts of mere dead rudimental relics of ancient art, this one feature should be revived as a nucleus for development. The same may be said of the Pointed arch, if the theory be true of its Saracenic suggestion. It had been invented in very early times, perhaps earlier than even the round arch, though its uses were not then appreciated. The Romanesque builders had adopted many dead forms of ornament from Saracenic and Persian manufactures, and the introduction of this one really living feature at the moment when the exigencies of the style demanded it (whether the idea occurred to them spontaneously or by suggestion), was the signal for throwing off, as effete and useless, all the orientalisms which they already had in use.

From this we may learn not to shrink from adopting into our developments external suggestions from whatever source, provided only that they approve themselves to our eye and our intellect as legitimate sources of beauty, or aids to construction, and as capable of being harmonized with the style we are working out. Let us throw them boldly into the fining-pot, and if we are skilful manipulators, the gold will remain and the dross be thrown off.

Another thing we may learn is that the mere precedence of one nation in the working out of a style, does not deprive the developments of neighbouring countries of the claims of nationality. The English transition began a little later than the French, and it is, as we have seen, distinctly marked in its character and its results, so that no one can ever mistake an English building for a French one.

The German transition came on after the English and French were perfected, yet is (if anything) even more national than our own; while the Italian Gothic, though an absolute importation and often defective in detail, has more strongly-marked national characteristics than any other.

When, however, we use the term "national," we do not usually refer to these local varieties, but rather wish to express the general fact, that in our own country, and amidst the family of European nations, those styles which were generated during the rise of our own civilization are more national than the revived architecture of the ancient world. Each country has its own local variety, but the whole is one style, and that style is our own. While reviving this style, then, though we make in each country our own phase of it our groundwork, we must not permit either the narrow prejudices of friends or the taunts of critics to lead us into the folly of rejecting any of the really noble and valuable elements of our style, in whatever country they may have been generated.

I will close my too protracted lecture with a quotation from that admirable writer and accomplished architect I have so often referred to.

He thus describes the leading practical principles of the architecture to which the transition we have been tracing out was the pioneer.

"From the commencement of the thirteenth

century, architecture developed itself after a method completely new, in which all the parts deduced themselves, the one from the other, with an imperious rigour. Now, it is by the change of method that revolutions in sciences and arts commence. The construction commands the form: the piers destined to bear several arches divide themselves into as many columns as there are arches: these columns are of a diameter more or less substantial, according to the load which will rest upon them, rising side by side with them to the vaults which they have to sustain, their capitals assuming an importance proportioned to this charge. The arches are slight or thick, composed of one or more ranges of vousoirs, as dictated by their function. The walls, becoming unnecessary, in great structures disappear completely, and are replaced by window openings, decorated with stained glass. Every necessity becomes a motive of decoration. The roofs, the leading off of the water, the introduction of light, the means of access and circulation to the different stages of the building,—even less important matters, such as ironwork, leadwork, ties, props, the means of warming and ventilation—not only are not concealed, as is so often done in our buildings since the sixteenth century, but are, on the contrary, frankly acknowledged, and contribute, by their ingenious combination, and the taste which ever presides over their execution, to the enrichment of the architecture. In a beautiful edifice of the commencement of the thirteenth century, splendid as we may think it, there is not an ornament to be spared, for each ornament is but the consequence of requirement satisfied."*

MASONRY-CONSTRUCTION.†

MASONRY MAXIMS.

ALL masonry ought to depend upon gravity for stability.

Rustics, rough-faces, rock-work, and other analogous forms of masonry are not necessarily any stronger because of the mass on the face beyond the bed bearing-line.

Acute angles, either in beds or in joints, are not allowable. Any angle more acute than a right-angle tends to weakness.

Bent beds, in arch-stones or in masonry generally, must be weak.

Mitre joints are not legitimate masonry: all mouldings must be returned;—the mouldings will mitre; the bed or the joint square.

Weight, over space, tends to weakness. Pyramidal-formed arches are objectionable.

Ashlar should have harmonious proportions. On face, 1—3—5. On bed never less than the depth of the face, and square full to the back of the ashlar. Slab-veneering is false masonry.

Arch-stones should have a just proportion to the openings, and to the ashlar generally in which they are set.

Projecting stones bearing weight on acute angles are weak, and this mode of construction is false masonry.

The springing line in arches must be the line of greatest strength: pyramids do not stand on their apex.

Combinations of rustic and of moulded masonry are incompatible with strength or with beauty.

Pediments beneath porticoes, or inside any buildings, are not useful. Largely-projecting cornices should not have pedimented windows immediately beneath.

Single-stone architraves, mullions, and quoins set on end, are a cause of weakness. The bedding of the courses should be carried throughout.

Single-stone columns are weak, especially those of laminar sandstones or of limestones. Built columns, like those at the Madelaine, in Paris, are better masonry.

Sham jointing ought never to be resorted to.

Mouldings ought to accord with the stone in which they are cut. Classic mouldings designed for marble cannot be cut in standstones so as to show and endure.

Buildings constructed out of the stone of a district are most in keeping with the landscape.

Ashlar-faced walls should not be backed with brickwork or with rubble without precautions to prevent shrinking or separation of the parts.

Deep quoins and thin courses produce weak work, especially in towers and in spires.

Notched and broken-coursed masonry is only allowable where the stone of the district is unsuitable for a more regular form of masonry. To spoil good stone for the sake of such imitation is false in masonry and extravagant in architecture. Put every stone to its best use in the best form, and not in the worst form.

Horizontal openings cannot be spanned with vertically-jointed masonry: columns, architraves, and piers must be covered with single stones, or with an arch: joggles, dowels, and cramps cannot make such work good masonry.

All building-stones having had an aqueous formation, such as stratified sandstones and limestones, should rest on their natural beds.

Combinations of brickwork and stones for facework are allowable under certain conditions. Perfect courses of bricks may alternate with courses of stone.

Combinations of various sorts of stone are allowable. Perfect courses of stone may alternate in variety.

Colour is allowable in architecture. Varieties in stones, and varieties in bricks, and in tiles, and in marbles.

Sculpture must be subservient to architecture when combined with it.

Few men have laboured more to learn in what art consists than Owen Jones; and his "Grammar of Ornament" will, I hope, become what its name implies—a grammar for architects and for artists.

With the following propositions I cordially agree:—

Proposition 1.—The decorative arts arise from architecture, and should be attendant upon architecture.

Proposition 2.—Style, in architecture, is an expression of the wants, the faculties, and the sentiments of the age in which it is invented. The peculiar form that expression takes, under the influence of climate and of the materials at command, constitutes style.

Proposition 3.—All works of architecture and of art should be suitable to the desired uses: plan and elevation should be in just proportion; and any decoration should have some use, or add some beauty.

Proposition 4.—In all architecture the order of precedence should be,—firstly, utility; secondly, construction; thirdly, ornament. The plan should be the best which it is possible to contrive for use: the construction should be the strongest possible to carry out the plan: the ornament should add elegance to the construction,—beauty to the useful.

The student of architecture will do well to make himself acquainted with the works of Nature; and the more he knows of her laws the better mason he ought to be. Geology teaches how rocks have been formed, and chemistry reveals the affinities of combination in stone, as also the causes and the processes of disintegration. Botany treats of the growth and of the structure of plants, and conchology of shells. Comparative anatomy enabled a Cuvier, and enables an Owen, out of a fragmental bone, to indicate, nay, even to build up, an entire, though hitherto unknown, structure of reptile, bird, or of quadruped: and in like manner should the architect learn to declare as to the style and structure of the temple from a fragmental moulding; and also so to design and execute any work that any fragment shall indicate the general character of the whole. A hewn and moulded stone should be a clear indication of the style of the complete structure.

Conchology is probably the most easily mastered science, and the most instructive for architectural purposes, as a few of the chambered shells, such as the living nautilus and the fossil ammonite, show how the least substance may be made into the greatest strength and most harmonious beauty. Vaulting, groining, and buttressing are carried out to perfection in shells. Rude strength may be attained by brute force and by vulgarity of materials; but strength with elegance, and with powers of endurance, can only be attained by study, by acquired knowledge, and by practice.

Admire the works of antiquity for the truth to be found in them, and not for their defects. Talk not of revivals or of restorations, but talk of study for the purposes of progress. The men who designed and who constituted our cathedrals and our abbeys were the best constructive stonemasons of whose works we have any remains. Egyptian masonry is more massive, Greek masonry is more refined, Roman masonry is more ponderous; but in Gothic masonry there is the massive, the refined, and the ponderous combined by knowledge and by consummate art in the designer and in the executor; yet, I am bold enough to say, that we have no example without many glaring defects, and these defects should be avoided.

Modern architects have at their command materials new to art, and the aid of sciences unknown to the ancients. We have chemistry for alchemy; we have machinery to aid in all the operations of building; and we have iron, plate-glass, and pottery,—and if pottery is not more perfect, it is more abundant. There are brick and tile machines, which can make bricks and tiles to any cross-sectional form, to any degree of lightness, and to any possible requirement of strength. Crypts, ceilings, vaults, and domes, may be constructed larger, lighter, more elegant, more secure, and consequently more enduring than any either in the East or in the West.

Iron, wrought or cast, may be made serviceable: cast-iron pipes have superseded the use of masonry aqueducts, and wrought iron and cast iron frequently are placed to take the part of masonry in bridges, as also the part of timber in roofs, and, in some instances, in ceilings. The architect and the engineer each use the metals where they are required; but there must not be a mixture of metal and stone, of metal and brick or tile, nor to any great extent of metal and wood, or metal, wood, and plaster, as in floors and in ceilings. Metal and glass may be used for purposes of lighting; but I think that metal and glass houses, such as the Crystal Palace, excepting for conservatories and similar purposes, will be found to be a mistake: unequal contraction and expansion, with condensation of moisture, and the resultant fracturings, leakings, and rustings, will demand heavy contingent annual expenses. There is no new style of architecture to come out of iron and glass: the materials for the architect to use will continue to be stone, bricks, and timber, with iron and glass as heretofore, but on a grander scale. Narrow windows and lead-framed lights are just as fit for modern use as the skin-garments and paint of the primitive Britons.

As I have dared to find fault, I presume I ought to commend and point out examples of masonry which I consider good. I do not know that this can always be considered imperative. There are, however, many fine examples of masonry which may be named. For bedding, jointing, and for beauty of proportion, the masonry of our cathedrals and abbey-churches may be examined and studied. The jointing, in most instances, is absolutely perfection. The weakness of the walls, pillars, and arches, has generally consisted in defective bond, but more in rubble hearting and rubble backing. It is this fatal hybrid mixture of masonry which has thrown many a vision of architectural beauty into premature ruin, before decay of the stone has set in, as the prostrate fragments of shafts and of archstones, of mullions and of transoms, and the wonderfully-contrived tracery, have arrises and chisel-marks as sharp and as fresh as the day the stones left the mason's banker. Many rich and florid buildings have, nevertheless, crumbled into shapeless ruin, almost with their newness upon them. Most of our cathedrals have been "restored,"—some almost to the extent as stated of Paddy's gun, which "*only*" required stock, lock, and barrel,—all that was not new being the ramrod.

The best specimens of Renaissance masonry I have seen are in Paris. The masonry, bedding, and jointing of the Pantheon, so far as I have examined them, and can remember them, seemed to me to be as perfect as one of our abbey churches. The French generally bed and joint ashlar work better than English architects, although there are plenty of false examples of masonry to be found in French buildings and in French architectural publications. Architectural publications generally, French, English, and Italian, are sad misleaders in construction, if they give construction at all. Men of each succeeding generation seem to copy, copy, copy, in one eternal gin-horse round. Architecture in such books seems to be a fossil—a frozen art. Men can invent steam-engines, cotton-spinning machinery, and the electric telegraph, can construct railways and steamboats, and can, from year to year, by improvements, advance such inventions. The same men could, probably, invent in architecture if they were never allowed to see an architectural example, or had not their imaginations trammelled by precedent. The three things requisite for invention and progress in architecture are, firstly, thought; secondly, thought; and, thirdly, thought.

Painters and sculptors, when they took up architecture, or had it thrust upon them, committed sad havoc with rules of masonry-construction. Many of the false forms and bad jointing were, probably, introduced by brothers of the brush. The picturesque in architecture is only allowable through legitimate means. A masonry front cannot, with truth, or safety to the build-

* The last sentence, though expressing a general truth, must not be taken too literally; for, though it is the great principle of Gothic architecture to decorate construction, this may be effected, simply or richly, and with or without sculpture or carving, according to the requirements of the case.—G. G. S.

† By Mr. Robert Rawlinson.· See p. 102, *ante*.

ing, be decorated as a breadth of canvas is painted, nor carved and sculptured after the manner of statuary.

Facility in picturesque drawing is a dangerous gift for a young artist to possess, unless backed up by a full knowledge of sound construction. Colour, and landscape, and figures of men and prancing horses, and skies with impossible clouds, in an architectural drawing, delight the eye of a mother, a sister, and a novice, but offend all true judges of art and of architecture. The recent exhibition of architectural designs in Westminster Hall was, for the most part, a depressing and melancholy sight. I never saw a galvanized corpse, but have read of one; and many of these designs gave me as much pain, because of their barefaced plagiarism and bad masonry, as a galvanized corpse would do. There were the everlasting forms, rendered worse, space cut up, mouldings, and carvings, without use, and consequently without meaning.

Shall it always be thus? Is the glorious art of the architect really dead? Has the human intellect been exhausted as regards architecture?—or do men blindly allow their intellects to stagnate?—or are we simply idle, contented to receive all that has been done, and use it as all which can be done in architecture? I will boldly answer—no! Architecture is not dead other than as the fabled phœnix died, to rise to a more glorious resurrection. Architects will study modern requirements, they will learn modern science, use modern judgment, apply modern means, and we shall have architectural structures—suitable to the requirements of the age—as pure in outline, as chaste in detail as the Greek temple, and, as complex and as perfect in construction as a Mediæval cathedral. There will then be utility, strength, and beauty again combined.

The young architectural student must ever remember that it is by his labour the poet's climate must be realized. He it is whose subtle art, as potent as Prospero's, must rear aloft "the cloud-capped towers, the gorgeous palaces, the solemn temples."

Sketched diagrams were exhibited and commented upon. There were doors and windows from Greenwich Hospital, from St. Paul's, St. Martin's Church, Whitehall Chapel, Somerset House, Temple-bar, and some others. The examples were considered by Mr. Rawlinson to show defective masonry-construction.

THE SOCIETY OF ARTS.

A DEPUTATION of members of the Society of Arts, and of presidents of the Institutions in Union, attended at Buckingham Palace on Thursday, the 11th instant, at three o'clock, to present a congratulatory address to his Royal Highness the Prince Consort, president of the Society, on the occasion of the marriage of her Royal Highness the Princess Royal with his Royal Highness Prince Frederick William of Prussia. About 200 were present.

The address, which was signed by upwards of 10,000 members of the Society of Arts and of the Institutions in Union, was read by Mr. C. Wentworth Dilke, chairman of the Council.

The report said,—

"The long period of fourteen years, during which the Society of Arts has enjoyed the active presidency of your Royal Highness, will, we trust, justify our seeking this opportunity to express our sense of the deep obligation which the arts, manufactures, and commerce of the United Kingdom owe to your Royal Highness, for the constant and discriminating attention and the judicious acts by which you have promoted their progress."

The Prince made an admirable reply, distinguished by kindly feeling and the absence of affectation.

Monday, the 5th of April, is fixed for the opening of the Society's tenth annual exhibition of *recent* inventions.

We may mention that a report as to the existing English Common and Statute Law, relative to artistic copyrights, has been prepared at the request of the committee, by Mr. D. Roberton Blaine, barrister-at-law, reporter to the committee, and may be obtained of Messrs. Bell and Daldy.

A special prize, of twenty pounds (placed at the disposal of the council for this purpose by the Rev. F. Trench and Mr. J. MacGregor), and the Society's silver medal, are offered for a writing-case suited for the use of soldiers, sailors, emigrants, &c. &c.

At the tenth ordinary meeting of the Session, held on the 10th instant, the paper read was,—"On the Application of Steam Power to the Cultivation of the Soil," by Mr. J. Algernon Clarke.

AMERICAN AND CANADIAN GLEANINGS.

A NEW armoury is to be erected at Albany, at a cost of 25,000 dollars. Mr. William Hodgens, formerly city engineer of Hamilton, and connected with the celebrated Dudley Observatory, has been appointed the architect.

The amount expended for school sites, and the erection of educational buildings, during 1857, in Upper Canada, was 42,807*l.* being an increase of 8,534*l.* beyond the expenditure of previous years, independent of a sum of 10,196*l.* for repairs and rents.

The floating debt of the Lake Shore Railway Company is reported at 210,000 dollars. All the earnings will be appropriated towards its payment, and no dividend declared until it is cleared off.

The cost of lighting New York city by gas during the past year was 400,000 dollars.

A fine large hall, suitable for lectures, concerts, &c. has just been finished at Waukesha, in Robinson's new block. It is 45 feet by 55 feet, 14 feet high at the sides, and 17 feet in the centre, with arched ceiling. It will accommodate twenty sets of cotillons, and will soon be opened with a large inauguration festival.

In the United States are 204,061 stores, and out of these have been 4,937 failures. Out of 1,600 counties, 1,000 have been without a failure. The total amount of the liabilities of the insolvent firms is 291,750,000 dollars, of which 156,021,000 will be paid, making a total loss of 143,780,000 dollars. In New York the failures have averaged 1 in 15, Milwaukee 1 in 33, Dubuque and Chicago 1 in 11, Philadelphia 1 in 26, Cincinnati 1 in 28, New Orleans 1 in 38, Mississippi 1 in 203, Georgia 1 in 170. Two new towns have been made in the State of Wisconsin, the first by dividing Kaukauna, and attaching a strip of its territory a section and a half wide north of Fox River, in town, 18 to Grand Chute, and providing for the organization of all south of the river into a new town called Buchanan; the second to be entitled Liberty, by dividing Embarass. The public schoolhouse at Brooklyn, lately destroyed by fire, wherein eight children (all boys) perished, is said to have been the largest, finest, and most complete of its kind in that vicinity, and thoroughly well built. It was of brick, four stories high, and covered a large tract of ground. The fire originated from a defect in the heating apparatus.

The Southern branch of the Milwaukee and Mississippi Railroad to Monroe has been opened, and with festivity. The Pacific Railroad is to be constructed between the Big Sioux and the mouth of Kansas River to San Francisco: alternate sections of land on both sides are to be granted, and 12,500 dollars per mile advanced on the completion of every twenty-five miles of the road until 25,000,000 dollars are reached. A destructive fire took place at Vincennes, whereby the large steam-flouring-mill of Messrs. Mars and Garwaing was destroyed. Estimated loss 12,000 dollars. A monument to the Pennsylvanians who fell in the war with Mexico is proposed to be erected at Harrisburg. The Mine Hill Railroad has been extended about ten miles, and the Mount Eagle line about five, making in Schuylkill county 488 miles, for the accommodation of the coal trade.

The stage route from Suchil to Coatzacoalcos is in progress of completion. Seven bridges, varying in size from 100 feet to 300 feet in length, have been built. One bridge, 900 feet long, is in course of construction near the town of Tehuantepec, about twenty miles at the New Orleans side of the Pacific terminus, for the erection of which preparations are being made. Waggons can pass the entire length of the line.

An important lead-mine discovery has been made at Galena by an Englishman named Mills, and it is considered good for six million pounds of the mineral.

Considerable progress has been made with the Hoosac tunnel, and the entire advance of heading since the commencement of the work, in January, 1856, is estimated to average 544 feet per annum. The operations are going on at both ends, and it will take twenty-two years to bring both working parties together. The first mile is said to have cost less than any of the succeeding ones. There are three different relays of men, each working eight hours in the twenty-four; besides men employed in removing rock and other services. The excavation at the western side of the mountain was through a loose limestone, which, not being of sufficient consistency to form a roof for the tunnel, it became necessary to sustain it by timbering until the side walls of masonry were surmounted by a deep brick arch. On the whole, the work is said to be carried on with vigour by the contractor.

The Government is building a custom-house at New Orleans, which will be the largest structure of the kind under roof in the world. It has been in progress since 1849, and is estimated to cost 3,225,000 dollars. The whole of this immense pile is expected to prove a loss on account of the insufficiency of the foundations, the walls having settled 18 inches, and the top of the building being 6 inches out of the horizontal line. The solid earth is 30 feet below the surface.

PROVINCIAL NEWS.

Bishops Sutton.—National Schools are about to be erected at Bishops Sutton, near Winchester, to which the bishop of the diocese is a liberal subscriber.

Sheffield.—Thirteen architects having sent in nineteen plans for the new hospital, and a subcommittee having been appointed, they selected five as the more eligible to be reported to the building committee. The medical officers of the charity also examined the plans. The building committee selected two from the five plans, and it was resolved to submit these to respectable builders, to obtain their opinion as to the cost at which they could be erected. The plans sent in, says the *Independent*, exhibited great variety of design, and high skill on the part of many of the competing architects. Several gentlemen had carefully studied the improved arrangements for hospitals adopted of late years, in this country and on the Continent, and had availed themselves of all the more important improvements.

Chelmsford.—The Russian trophy to be erected in front of the Shire-hall, in this town, is to be placed on a stone pedestal, 22 feet by 15 feet, from the design of Mr. F. Chancellor, who will superintend the erection.

Farmborough (*Somerset*).—The new parochial schools for this parish were formally opened by the Bishop of Bath and Wells on Friday in last week. They are situated at the junction of the Farmborough and Wells roads, and consist of schoolroom, class-room, and teacher's residence, with play-grounds attached; and are in the Late Decorated style of architecture, from the designs of Mr. S. B. Gabriel, architect. The work has been carried out by Mr. Anstee, builder.

Aberdare.—A new branch bank has just been completed here for the West of England and South Wales District Banking Company. It is situated in Cardiff-street, and is in the modern Italian style, built with Newbridge stone, squared and pitch-faced, with dressings of Bath stone; the whole surmounted with a panelled frieze, and dentilled cornice, with blocking course. The whole structure is fireproof, upon the system patented by Messrs. Fox and Barrett, the floors and roofs being formed with rolled iron joists carrying concrete upon and between them, and finished with surfaces of Portland cement. The architect is Mr. W. Gingell. Mr. Diment, of Bristol, was the contractor for the masonry, plastering, papering, and painting; and Mr. Bowden, of Bristol, the contractor for the joiners', plumbers', and smiths' work.

PHOTOGRAPHIC SOCIETY'S EXHIBITION.

THE Photographic Society have arranged their exhibition on the present occasion in a commodious and light gallery at the South Kensington Museum, where they have 705 specimens, exclusive of an interesting series of works illustrating the application of photography to the reduction of maps as introduced by Colonel James, royal engineers, and practised in the ordnance survey; besides a number of other photographs taken at St. Petersburgh, Singapore, Halicarnassus, &c., by the corps of engineers. In respect of the reduction of maps, the catalogue says, "By this process there is an annual saving to the country of 1,800*l.*;" and in a memorandum on the subject, which has been published by the Science and Art Department, showing how the introduction of photography into the corps of royal engineers has in great measure arisen from the connection of the corps with the department, it is stated that the application of photography to the reduction of the various maps and plans required in the ordnance survey will produce a saving to the country of not less than 30,000*l.* There is now a systematic teaching of the engineers under Mr. Thurston Thompson, and photographers have in this way been sent to Cawnpore, Bombay (the army in the field), Canton, &c. In a few years it is expected there will be a net work of photographic stations spread over the world, acting under a systematic instruction, and having its results permanently recorded at the War Department.

In the general exhibition, which contains a number of very beautiful specimens, we are not certain that there is any special advance observable. The most remarkable photographs as a series are those of the Art Treasures Exhibition, by Caldesi and Montecchi, "The Abandoned," after Stanfield, 22, and "Dort," 41, after the same painter, for examples. In respect of gradation, in landscape, Mr. Roger Fenton still keeps ahead of his contemporaries: for three specimens, among many, see 520, "View in Dolwyddellan," 525, "Mount Tryfan," and 390, "Ravine in the Lledr Valley." The portraits of Daniel Maclise, David Roberts, and E. M. Roberts, "Arcadians both" (all three, as an Irishman would say), by Lake Price, are admirable, and the same accomplished photographer has a portrait of Prince Albert of the greatest merit.

Mr. Thurston Thompson is a master in the art: to prove it we need only to point to 496, "A Frame, containing three subjects," the oak, Spanish chestnut, and the beech. A dozen others from the same hand would equally maintain the position.

Mr. F. Frith has a frame, containing five subjects from Egypt, the "Entrance to the Temple of Luxor," "Abou Simbel," and others, of great interest; and Howlett's portrait of Brunel (and the chains of the *Leviathan*), 20; Messrs. Mudd's "Stairs at Haddon Hall," 147; and some of Maull and Polyblank's portraits, will enforce attention.

THE PRIZE MEDAL OF THE DEPARTMENT OF ART.

IT will be remembered that the Department of Art, deploring the want of excellence on the part of English artists in medal-die engraving, entrusted the preparation of their medal (to be presented to the successful scholars), to M. Vechté. We have just now seen the result. It takes the shape of a large medallion, of one side only, in *repoussé* work, afterwards chased on the face, and as a piece of craftmanship is a production of great skill and beauty. Of the design, which includes figures of Genius, the Arts, Envy, Malice, Time, and a shield for the recipient's name, scattered somewhat wildly round a medallion-head of the Queen, we may have another opportunity to speak. The electrotype process is to be resorted to for the production of the number wanted, and each will probably be mounted in a frame for suspension.

NOTES UPON IRON.

THE houses that stand high in the market are making a tolerably large quantity of iron of the best description, principally for girders, for bridges, and the like; but the trade as a whole remains exceedingly dull, on account of the recent commercial disasters. Although the make of pig iron has been greatly reduced, yet it is in excess of the demand. The makers of best iron, however, maintain their prices. Much distress exists among the workpeople in the districts where there have been so many failures by iron masters. The 13th of this month, a very trying day, passed over without any fresh failure.

METROPOLITAN BUILDING ACT.

MEANS OF OBTAINING DECISIONS AS TO PROJECTED WORKS.

I MADE no misstatement, as alleged in your last number by Mr. Snooke, for I have his note to me of the 15th Oct. last, urging me to try the question "immediately," "as it most seriously affected his position and practice," &c. But apart from this question, I am sure I am speaking the feeling of District Surveyors generally, in saying that it is most desirable to adopt again some means of trying any difference between the District Surveyor and the builder, before the latter shall have perhaps incurred a heavy outlay, leading to one of two very undesirable results, either in requiring a costly remedy, or in the magistrate being deterred by the cost from enforcing a remedy at all. R. HESKETH.

ARCHITECTURAL PUBLICATION SOCIETY.

ADVERTISING.

SOME time ago, I remember seeing a complaint in your journal that architects, as a body, did not support architectural publications to the extent which their numbers and position would lead one to expect; and the Architectural Publication Society was instanced as one to which every person interested in architecture ought to contribute. I felt the justness of the remarks at the time, and purposed troubling you with a few observations relating to the same; and this intention has just been recalled by seeing the first volume of the "Dictionary of Architecture" on the table of the Architectural Exhibition. This is the first time I have seen any specimen of the work, or any prospectus; and several architects that I have asked for information have been as ignorant of the matter as myself. Of course it will be answered, "Well, it's your own fault; you could have inquired in this or that place, and obtained every possible information: it has been duly advertised." Be it so; but still I must say that it has not come before me, although in general a subscriber to anything likely to promote our art; and I find others situated precisely as I am, which has induced me to make these remarks. If it was only made known, at least to every architect, in the same manner as the Photographic Society have made known their proceedings, or as in France, "Viollet-le-Duc's Dictionary," is made known, I believe the number of subscribers would be very materially increased. It should be announced how the parts from the commencement are procurable, and at what rate. The French custom is very good: most publications are monthly, or perhaps twice a month, and on the first day the parts are distributed in all the various *ateliers*, and to all the various subscribers. Supposing the work has already made considerable progress, you can have it from the commencement, agreeing to subscribe so much a month; and this, indeed, is the case with any work whatever. It is surprising in this way how many subscribers to current works, and purchasers of those already completed, are thus obtained among the pupil class, as well as others, who are invariably very considerably worse off as regards cash than their English brethren. As the system works well there, why should it not here? Many a young man might thus, at a trifling *present* expenditure and consequent inconvenience, it may be, acquire superior and valuable works. I would recommend our publishers of architectural and art works to consider this. With regard to the matter immediately in hand, the "Dictionary of Architecture," I am sure there is much that its authors may learn from their French contemporary, and, among other things, the system of its advertisement, publication, and distribution. R.

SMOKE NUISANCE, VAUXHALL.

I BEG to draw the attention of the proper authorities, through your valuable Journal, to the abominable nuisance which is daily and almost hourly occurring, at the two gas companies' works which are situated at the Surrey side of Vauxhall-bridge. When the retorts are drawn the whole neighbourhood is enveloped in smoke and stench, and this I have observed when Her Majesty and the Royal family have been passing over the bridge, and the carriages have been quite hidden by the clouds of smoke issuing from the roofs of the gas-works and blowing down into the road.

Now I would ask, why are these two companies to be allowed to create such a nuisance and inconvenience to the public at large, when there is an Act in force to prevent them? Why are they not *compelled* to erect lofty shafts to receive and carry off, at a great height, *all the smoke* produced by their operations? These remarks are also applicable to Price's candle factory (just above Vauxhall-bridge), as the sickening stench from their works is also equally objectionable, both by night and day; and they, also, ought to be compelled to carry off the effluvia arising from their works, in the same manner, as these three companies' works are a pest to the locality, and such factories ought not to be allowed within the metropolitan districts. Their proper place would be some uncultivated, barren heath, where the stench and smoke would be dispersed, without inconvenience to any person, even to themselves. R. M. C.

SUB-CONTRACTORS AND EXTRA WORKS.

Beedle v. *Street*.—In the Court of Common Pleas, on Monday last, the 15th inst. a trial took place before Judge Byles relative to a building transaction. The suit was "Beedle *v.* Street," and was to the following effect:—Messrs. Ring and Stanger, builders, of Mile-end-road, entered into a contract to erect and finish a certain house, the Trevor Arms, at Knightsbridge, for Mr. Street, the defendant in this action, for the sum of 1,070*l*. These contractors underlet to the above-named plaintiff, a sub-contract, for him to perform the plasterers' work, which he agreed to do for the sum of 130*l*. During the time the plaintiff Beedle was performing the work the defendant Street directed him to *use gauged stuff* in lieu of the common putty for finishing the ceilings, cornices, &c.; Mr. Street also directed him to use "Keene's" and other cements for the angles and skirtings of rooms, &c. Of course Mr. Street did not for a moment imagine that he was making himself liable to the plaintiff Beedle, he being only a sub-contractor with Ring and Stanger, they having entered into a bond to perform the whole of the artificer's works necessary to be done for Mr. Street—to the satisfaction of his surveyor, and all extras or omissions arising upon that contract were to be either added to or deducted from the amount of the aforesaid contract, and which account was not to be arranged until four months after the completion of the said contract. The plaintiff Beedle, however, does not acknowledge the original contractors, Messrs. Ring and Stanger, for whom, and not for Mr. Street, he undertook to perform the whole of the plasterers' work, but actually commences an action at law against Mr. Street, for the amount of those *extra* works, amounting to 58*l*. 5s., and a verdict was given in his favour for the sum claimed. Is this "justice?" if so what contractor is safe? for any journeyman in the contractor's employ could receive orders (as Beedle did for Messrs. Ring and Stanger) to execute works, and when done sue the employer of the original contractors, thereby taking away their connection. This would put an end to all confidence now relied upon by a contractor and sub-contractor.

I would also call your attention to the fact, that during the trial in question it was ludicrous in the extreme to hear the language of the counsel, both of plaintiff and defendant, neither of them seeming to understand the technical terms made use of by them—the bill of quantities and the specification were taken the one for the other; then again, the "putty," for the ceilings, they imagined, I presume, was similar to glaziers' putty. It is time there was a proper tribunal, where something about building transactions would be understood.

C. FOSTER, Architect.

Books Received.

VARIORUM.

MR. TIMBS'S "Year-Book of Facts in Science and Art," for 1858 (Kent and Co. 86, Fleet-street), is as full of varied interest as ever it was. The selections, condensations, &c. display great judgment, and the whole forms a complete repertory of the last year's advancement in science and art. A vignette of the *Leviathan*, and an admirable portrait of Mr. Scott Russell, very appropriately grace the title-page of this year's volume.——An able treatise "On Sanitary Legislation and Administration in England," by Mr. H. Wyldbore Rumsey, has been published by Churchill, of New Burlington-street. Portions of this treatise were read in the form of an address before the Public Health Department of the National Association for the Promotion of Social Science, at its inaugural meeting held at Birmingham in October last. The treatise is a very comprehensive one, and deserves to be known.——Amongst our books received is a third edition of a work which is of very general interest, and, so far as regards one of its subjects, "Explosive Compounds," not foreign to our more peaceful sphere: we allude to Mr. Scoffern, the chemist's, work on "Projectile Weapons of War and Explosive Compounds" (Longman and Co. publishers). The author treats his subject as one relating to a variety of "philosophical instruments, embodying and illustrating chemical and mechanical laws." His remarks on the supposed origin of gunpowder are especially interesting. In his opinion that this potent agent was known in China and India in very ancient times we feel much inclined to concur. Even at the present day gunpowder is probably far more generally used,—not in deadly warfare, but in the shape of fireworks,—in China than in any other country in the world. The Sanscrit allusions to it as a power in war among the Gentoos are curious; as also is Philostratus's account of "those holy men, beloved of the gods," the Oxydracæ, who dwelt between the rivers Hyphasis and Ganges (in Oude, the "holy land"—the Judea — of India, was it not?), and who arrested Alexander's victorious course, and "overthrew their enemies with tempests and thunderbolts shot from their walls."

Miscellanea.

CHEVALIER PETTRICH'S COLLECTION OF SCULPTURE.—This collection, now at 53, Pall Mall, is peculiar, inasmuch as it includes original groups of North American Indians, and other statues and models, exhibiting the habits of this expiring race. Chevalier Pettrich, a native of Dresden, was a pupil of Thorwaldsen, and left Europe in 1835, to prosecute his studies of the North American Indians. The bas-reliefs exhibit the characteristics of these tribes in war, in hunting, in the council, and in the dance. As Catlin painted these poor, miserable, over-praised savages, Pettrich modelled them.

TOTHILL-STREET RAGGED SCHOOLS.—The Tothill-street ragged schools, after great exertions on the part of their supporters, have, during the past twelve months, been removed from their old, ill-ventilated, and dilapidated rooms, to new and commodious premises, by which their usefulness has been doubled. The committee are appealing most earnestly for aid in behalf of their funds, which are now in debt to the amount of 100*l*. Mr. S. C. Hall has undertaken to give a lecture, in aid of the funds, at the Eaton-square Rooms, on Thursday, 25th, on "The Fairy Legends of Ireland." Those who go will do good, and be pleasantly entertained at the same time.

Institution of Civil Engineers.—On the 9th inst. (Mr. Joseph Locke, M.P. president, in the chair) the discussion upon Mr. Henderson's paper, "On the Methods generally employed in Cornwall in Dressing Tin and Copper Ores," was continued throughout the evening. It was stated, that the universal feeling among the better informed "dressing captains" in Cornwall was, that the present methods of dressing ores, requiring such a large proportion of manual labour, were a reflection on the mechanical progress of the age. Mention was made of Mr. Herbert Mackworth's machine for washing coal, by a slow, continuously ascending, current of water. The machines, six of which had been set to work since May, 1857, were said to be almost automatic. It was stated that the utmost nicety was required in the separation of metal from the ores of tin and of copper, especially as, in the case of the latter mineral, the present average quantity of metal extracted did not exceed 6 per cent. of the quantity of ore raised. Instances were given of only 17⅓ lbs. and 17$\frac{7}{10}$ lbs. of tin being extracted from each ton of ore raised, and yet from that apparently small return an adequate profit was made.

Messrs. Maw's Tile-work.—We have already expressed commendation of the specimens sent by Maw and Co. to the Architectural Exhibition. Since our notice an additional collection of their mosaics has been placed there, which deserves attention. This includes a specimen of red and black paving at 5s. 6d. a square yard, showing the tiles in combination principally used in the aisles of churches and cemetery chapels. The tiles are 4¼ inches square, and, when placed diagonally, occupy exactly 6 inches, which enables them to be associated with 6-inch tiles, laid square. A restoration of a mosaic in Palermo Cathedral, capable of being formed into panels of any dimensions. A panel of mosaic executed in tiles, in imitation of the natural stones used in the construction of the "*Opus Alexandrinum*" of Byzantine buildings. A complete specimen of mosaic of a character suitable for a string course or narrow passage. A specimen of mosaic suitable for a corridor, from 3 to 4 feet wide, or the passages of a conservatory, the centre made up of a rather elaborate pattern, composed of buff hexagons, enclosed by a narrow band-work of black, the intermediate spaces being filled in with red stars, composed of lozenge-formed tesseræ: the border is composed of black and white inch squares, arranged in a narrow pattern between bands of dark grey. An adaptation of a mosaic occurring in the Basilica of San Lorenzo at Rome, in which the pattern, formed of a combination of triangles, has been rendered in a delicate gray or dove colour, black or buff, relieved by the dark red ground, which the pattern separates into star-formed masses. These are executed in lozenge-formed tesseræ.

A Surveyor for St. Ives.—Sir,—A published report of the St. Ives (Hunts) Improvement Commissioners shows that the Board have unanimously resolved to appoint a surveyor at 15*l.* a year. You may think it is a misprint, but it is too true. 15*l.* a year is 5s. 9d. a week, or 11½d. per day, being 2s. a day (and beer), less than the Board pay their road-scrapers. The town is wretchedly drained and paved, so that the commissioners really need an engineering officer, yet they propose to pay 15*l.* a year to a barber's clerk, or tailor's errand boy. Let it be borne in mind that St. Ives is an important market-town, containing many persons of affluence, who can afford to pay a competent officer liberally. Auctioneering architects and advertising surveyors, who work for half per cent. are bringing the profession to a pretty pass.—Cambridge.

Liverpool Architectural Society. — The ninth meeting of the present session was held on Wednesday, the 10th inst. at the Royal Institution. Mr. Hay presided. Mr. J. A. Picton read the second part of his paper on "Modern German Architecture." In referring to Potsdam,—henceforth the residence of the Princess Royal,—Mr. Picton characterised it as the Versailles of Berlin. A large number of coloured views of buildings in Germany were exhibited.

London Crossings.—Do not you think that it would be very serviceable to have a subterraneous passage for foot-passengers under the road just by the King William statue, lit day and night by the electric light, with well-holes for ingress and egress, and a light iron railing on granite steps, *à la* Thames Tunnel? Also another at the crossing by the Bank, Mansion House, and at Cornhill, Leadenhall-street, and other parts of London where the immense carriage-traffic renders it unsafe for foot-passengers.—R. H. D.

*** The sewers would probably prove a bar. A safe mode of crossing is certainly much needed.

Mr. Chubb's new Till.—The frequent plunderings of shop-tills of late, have induced Mr. Chubb, the scientific lockmaker, of St. Paul's-churchyard, to invent one of a new description, made of iron, and so encased as to insure perfect security as regards all attempts to obtain access to the contents by any other means than the legitimate key. Such a thing as pilfering from this till, by any sly side-wind, like those to which too many tills are liable, is here out of the question. Nothing short of unscrewing it from the counter, and walking off with it bodily, would serve the purposes of dishonesty in this case; and perhaps Mr. Chubb will excuse the liberty we take in suggesting to him, that an additional security, in the prevention even of such a contingency, might easily be obtained by bolting and riveting its fastenings through the counter, instead of merely screwing it on to the under side. The article is so massive and weighty, that there must be a constant pull upon ordinary screws, hanging it up in this way, at any rate; so that a double advantage would thus be gained.

The Public Offices.—On the 11th instant, Mr. Tite asked the First Commissioner of Works, in the House of Commons, what steps had been taken with reference to the proposed new Government Offices at Downing-street? Sir B. Hall having briefly stated the steps that were taken to obtain designs, said,—A Bill to acquire the limited site was introduced, but the House of Commons refused to vote the price, which amounted to 270,000*l.* They were, therefore, now shut up to a much more limited site, between Downing-street and Crown-street. For some months past a correspondence had been going on between the Treasury and the Board of Works with reference to the erection of the public offices on this limited space; and if his hon. friend chose to move for that correspondence, he would lay it before the House. Mr. Tite said he would move for the correspondence.

Appointments at Liverpool.—At a meeting of the Liverpool Town Council last week it was resolved to appoint Mr. Hawksley consulting engineer for the Rivington works, at a salary of 200 guineas per annum, and travelling expenses; Mr. Gates superintendent of the reservoirs at Rivington, at a salary of 150*l.* a year, with house rent and the use of a horse; and Messrs. Caldwell and Jones to act under him, the former at a salary of 100*l.* per annum, and the latter at 30s. per week.

Birmingham Architectural Society.—At a meeting of the Birmingham Architectural Society last week, Mr. F. Empson, President, in the chair, Mr. J. T. Brown, jun. read a paper "On the Application of Photography to Art and Art Purposes, but more especially with reference to Architecture and the Architectural Student."

Treatment of Builders.—Having noticed in your journal exposures of unfair play towards the building profession, I am induced to apply to you for your valuable opinion on the following case:—Tenders were to have been delivered a fortnight since for alterations and additions to a house in this town. Time, twelve o'clock. A few minutes after that hour seven out of eight of the tenders were delivered; and as it was known they would be opened "above board," and the lowest accepted, several builders remained to know the result. Finding the eighth did not arrive, the architect proposed, and the builders present and a representative of the person for whom the work was to be executed agreed, that the tenders already in should be opened, and all persons in the office should remain until one o'clock, the latest time for receiving any other tender; if in after that time not to be accepted,—even if found to be lower than any before opened. Mine proved to be the lowest, and it was concluded that it was my job; but at about twenty minutes after one in came the No. 8, 15*l.* below me. The architect and I protested against its acceptance, but to no purpose: it was taken, and the work is now being proceeded with—the architect, sensible of the unfair dealings of his employers, having given up the work. No doubt you have met with similar cases to this; and if you can inform me, through your paper, whether compensation has been sought and obtained, you will confer a favour on me and the trade in general of this and the neighbouring towns. I may state that the builders present have all promised to come forward with their testimony as to the agreements made prior to the opening of the tenders.—W. C.

Plymouth.

*** All would depend on the ability to prove a contract made by the employer. Our correspondent should put the exact particulars before a solicitor.

Public Works in South Australia.—The opening of a new bridge over the Angas, in the town of Strathalbyn, took place on 30th November. St. Andrew's-bridge (as it is called) has a span of 88 feet. The abutments are built of stone, very similar in colour to that from the Glen Osmond quarries. The cost is 1,770*l.* and the entire expense, including approaches, will be about 2,200*l.* being within about 20*l.* of Mr. Boothby's original estimate. The working drawings were prepared by Mr. Boothby, under whom, as Superintending Surveyor of the South-eastern District, the work has been executed. Messrs. T. and J. Barker, the contractors, are the same who built the bridges over the Light, Gilbert, Wakefield, Onkaparinga (at Greenthal), &c. and are now engaged upon that over the Torrens at Gumeracha.——The submarine cable, intended to be laid down across the Murray Channel, and to form part of the telegraph to connect Adelaide with Melbourne, arrived on 13th November. The whole line was expected to be completed in March or April.——The Adelaide City Waterworks are being rapidly pushed on towards completion. The Chief Commissioner (Mr. Maturin) recently stated that everything was prepared for laying down the pipes immediately on their arrival from England; and that, although contracts to the amount of 115,000*l.* had been taken, the original estimates had scarcely been exceeded.——The Government measure to appropriate 73,000*l.* for the completion of the City and Port and Adelaide and Gawler Town railways, had passed its second reading in the Legislative Council, according to the *Register* of December 9th.

Raising the "Ontario."—We some time back published a brief statement of the rescue of the wreck of the barque *Ontario* from off the Plymouth Breakwater, by Mr. Damant. Our informant had read an account of it in the *Plymouth Herald*, and was furnished with the detailed statement, of which we gave a mere abstract. Mr. Orchard has called upon us to state that the raising and removing the *Ontario*, both as to plan and management, were altogether his own, and the whole operation was conducted exclusively by himself. Having done this, we must now leave these gentlemen to settle their difference in other pages than ours. We should perhaps have stated that Mr. Damant speaks of Mr. Orchard as "having conducted all the rigging operations, and as being a leading man in the dock-yard, who has, on other similar occasions, honourably distinguished himself;" and our informant was to blame in not having supplied us with this fact.

German Architectural Literature. — A work for architects, now being published by Brockhaus of Leipsic, and Avanzo and Claesen of Brussels, is mentioned by contemporaries. It is by Vincenz Statz, an architect, of Cologne, and is entitled "Church Architecture in the Gothic Style." It is in large folio, and contains seventy-two engravings.

Architectural Society of Northampton. —At a committee meeting held February 8, the Rev. Lord Alwyne Compton in the chair, Mr. James exhibited several specimens of stencilling on varnished deal for internal house decoration, also stencilling on painted ground, of no more cost than "graining," for which it is a substitute: the patterns were executed by Mr. Lea, of Lutterworth.

Masonry: Backing.—In your two last numbers there have been some observations on the mischiefs of irrelative facing and backing. Mr. Rawlinson (p. 102) speaks well on this subject, and I have seen much to confirm it: in one case, more especially, where an ashlar front in 12-inch courses was backed with brick, so that the four joints of mortar in the latter told on one (probably much thinner) joint in the facing; the buckling was so serious that the building had to be taken down. A curious case, however, occurred in my town many years ago. The walls of the house had handsome granite ashlar facing, but were backed with common Dunstone rubble. The natural results ensued; but though alarming, were successfully met by some thousands of small oaken wedges being driven into the backing joints, beginning, I presume, with the top of the wall, and thence working downwards. My more immediate object is, however, to refer to the *veneering* process so largely followed in Bath, where thin slab-faces in perhaps three courses out of four, are somehow or other, made to work well with ordinary rubble in rear. I believe a good deal of iron cramping is used; but if any of your correspondents—perhaps Mr. Rawlinson—could favour us with a good working section, showing how this is so extensively and satisfactorily effected in houses that are as durable as most others, it would be instructive and satisfactory. R. J. Nelson, Lieut.-col. R.E.

EXCAVATIONS AT BUILDWAS ABBEY.—Mr. Moseley, of Buildwas-park, and Dr. Reider, his agent, have been making investigations among the Abbey ruins. Tradition has long asserted the existence of a subterranean passage from the building to Much Wenlock: whether tradition in this case is, as in so many others, an *ignis fatuus*, yet remains to be seen; but, according to the *Wolverhampton Chronicle*, an underground passage, the basement of which is at a depth of 18 feet 7 inches from the surface, and the width of which is 3 feet 4 inches, has been discovered. It is paved with Roman tiles, some of which are said to be very beautiful,—one in particular, which has a white cross upon a dark green ground. The passage runs south-east by south, and has a branch running off from a three-crowned arch to the north-west. In this passage a number of human bones have been found, also a black marble cross, two copper candlesticks having the appearance of once being silvered, and a stiletto, with a gold pin.

ACTION OF THE ATMOSPHERE ON ZINC.—Dr. Pettenkofer, in a report addressed to the Principal of the Bavarian Commission of Railways, states that, according to his experiments, a zinc roof in the course of twenty-seven years is oxidized to the extent of 8·381 grammes (about 130 grains) per square foot, nearly one-half of which is removed by water condensed from the atmosphere. The author also observes that the destruction of zinc roofs is certain and inevitable, and that a coating of oxide can never completely protect the subadjacent metal from further oxidation.

BRIDGES IN AUSTRALIA: A PATENT.—Mr. George Bate, a practical engineer, now living at Yarraberg, East Richmond, in Australia, formerly a resident of Wolverhampton, according to the local *Chronicle*, had constructed a timber bridge, on a new principle, over the Murray river at Echuca. The peculiarities and advantages of the principle (which Mr. Bate has since patented), consist in an arch built after the manner of the felloes of a wheel, a cohesion beam above, and a tension beam below, crossed by radii springing from a common centre, the whole so knit together that external abutments are rendered unnecessary, added to which are cheapness and rapidity of construction, lightness and convenience of transport. The bridge across the Murray is erected on pontoons, and consists of ten arches 33 feet long, 27 feet span, and ten feet wide. A similar bridge was then designed to cross the Campaspe river, and after being submitted to a committee of inquiry, on which were several eminent engineers, it obtained the sanction of the Colonial Legislature, who passed an Act authorizing the construction of the bridge. The quantity of timber used in this latter bridge is 1,200 cubic feet, and of iron three tons. The entire length of the bridge is 121 feet; width, 11 feet clear, and 17 over all; height of sides, 10 feet; span, 107 feet. The net cost was between 700*l.* and 800*l.*

MEMORIAL WINDOW.—A window has been lately placed in the south aisle of the church of St. Peter, Kirby Bellars, near Melton Mowbray, in memory of the late Rev. E. Manners, for many years rector of Goadby Marwood, in the same county. It is a two-light window, the upper part filled with foliated tracery: the whole is filled with stained glass by Wailes, and is divided into four compartments, containing passages in the life of St. Peter, as typical of the life of a minister, viz.—the call, ordination, charge, and martyrdom. Some care has also been taken in finishing the interior of the window with shafts and capitals. Mr. R. W. Johnson was the architect.

IN-AND-IN WORK.—Sir,—Can any of your readers inform me whether a surveyor holding office as councillor in a borough incorporated under the Public Health Act can legally contract or charge for making assessments on property, valuations, &c. and for measuring for an intended new workhouse, and then, jointly with an architect, contract for building the workhouse, all within the same borough?—B. L. T. N.

LECTURES, ROYAL ACADEMY.—On Monday, the 15th, Mr. Richard Westmacott, R.A. delivered his first lecture on Sculpture. The remainder of the course will be given Monday, 22nd; Monday, March 1st; and Monday, March 8th. Mr. Hart, R.A. commenced his course on Thursday, 18th.

THE NORTHAMPTON SURVEYORSHIP.—Mr. Pidcock has been appointed, from amongst seventy candidates, to the office of surveyor to the Northampton Improvement Commission, instead of Mr. Jones, resigned. The salary is stated to be 200*l.*

KING'S HEATH NEW CHURCH COMPETITION.—The design prepared by Mr. Edward Holmes, of Birmingham (submitted in limited competition) has been selected by the committee appointed to erect the edifice.

PERSONS EMPLOYED ON RAILWAYS.—A return of the persons employed on the railways of the United Kingdom on 30th June, 1857, has been published by order of the Commons. The length of line opened being 8,942 miles, and the number of stations 3,121, it appears that there were employed 221 secretaries and managers, 26 treasurers, 150 engineers, 398 superintendents, 198 storekeepers, 201 cashiers or accountants, 997 inspectors or timekeepers, 2,471 station-masters, 404 ticket-collectors, 156 draughtsmen, 8,712 clerks, 1,335 foremen, 3,563 engine-drivers, 3,644 assistant-drivers or firemen, 3,716 guards or breaksmen, 21,337 artificers, 3,263 switchmen, 1,998 gatekeepers, 2,349 police or watchmen, 17,091 porters or messengers, 8,260 platelayers, 26,285 labourers, and 2,885 persons in miscellaneous ways. On 3,193 miles of unopened railways there were employed 44,037 persons, so that the railway business of the empire required the services of 153,634 persons; 116,634 in England and Wales, 20,172 in Scotland, and 16,891 in Ireland.

[ADVERTISEMENT.]

Leadenhall-street, May 20, 1857.

GENTLEMEN,—In answer to your request I have great pleasure in adding my most unqualified testimony to the efficacy of the Wrought Iron Revolving Shutters, erected by you at my shop ten years ago, which, under the circumstances, afford a strong proof of their superiority over others; the Glass being the largest in London, the Shutter is without support, other than its extreme edges (there being no centre sash-bar), yet from their extreme rigidity the necessary protection is obtained, and which, from my experience, I can confidently assert would not have been ensured by any other Shutter extant.

Yours respectfully,
GEO. DONNE.

Messrs. CLARK,
15, Gate-street, Lincoln's-inn-Fields.

TENDERS.

For the construction of the roads and sewers at Catchcroft Field, Holloway. Quantities not supplied. Messrs. Wigg, Son, and Oliver, architects:—

Gomme and Bryon	£2,293 0 0
Cauland	2,046 0 0
Yeoman	1,983 0 0
Rentmore	1,973 0 0
Ramsbottom	1,930 15 6
Knight	1,894 0 0
Mansfield	1,854 0 0
Gutteridge	1,835 19 0
Cole	1,744 0 0
Harcourt	1,698 0 0
Hill	1,656 0 0
Sabey	1,650 0 0
Murray	1,644 0 0
Strickson	1,616 0 0
George	1,613 0 0
Dethick	1,605 0 0
Gibson	1,548 0 0
Phillips	1,464 0 0
Deards	1,426 0 0
Rogers	1,371 0 0
Pound	1,369 19 0

For the new workhouse for the Medway Union. Mr. Frederick Peck (of the firm of Peck and Stephens), architect. Quantities supplied:—

Names.	General Buildings.	Entrance Buildings.	Fittings.	Well, Tank, &c.	Iron Pipes.	Total.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Moxon	12,667 0 0	1,552 0 0	1,065 0 0	340 10 0	279 10 0	15,904 0 0
Rees and Co.	12,285 3 3	1,666 19 5	1,075 0 0	304 5 5	282 18 1	15,014 10 4
Foord	12,927 0 0	1,160 0 0	1,110 0 0	323 0 0	313 0 0	14,933 0 0
Myers	11,841 0 0	1,122 0 0	1,124 0 0	349 0 0	233 0 0	14,669 0 0
Ayres	11,643 10 0	1,095 2 8	857 17 9	427 2 9	253 3 2	14,276 16 4
Barker	11,409 0 0	1,160 0 0	1,000 0 0	380 0 0	250 0 0	14,190 0 0
Spicer	11,294 0 0	1,073 0 0	1,036 0 0	301 0 0	267 0 0	13,971 0 0
Kirk and Parry	11,330 0 0	1,107 0 0	955 0 0	319 0 0	205 0 0	13,916 0 0
Stump	11,032 0 0	1,053 0 0	971 0 0	320 0 0	261 0 0	13,637 0 0
Naylor (accepted)	10,997 0 0	1,048 0 0	1,003 0 0	284 0 0	259 0 0	13,591 0 0

For Middle Level Drainage Contract. There were twelve tenders sent in for the above contract, and the undermentioned three were invited to attend a special meeting of commissioners at Farmer's Hotel, Westminster, on Tuesday last, when, after discussion, it was decided in favour of Mr. Sissons, as the lowest:—

Smith Simpson, Lynn	£16,500 0 0
Garrett, Peterborough	16,000 0 0
Sissons, Hull	14,500 0 0

For Upton-on-Severn National Schools, in accordance with advertisement. Mr. George Row Clarke, architect. Quantities supplied:—

Griffiths, Eldersfield	£1,190 0 0
Hatton, Upton	1,150 8 4
Cook, Upton	1,068 2 2
Wridgway, Upton	1,058 14 1
Collins, Tewkesbury	1,030 0 0
Wood, Worcester	993 0 0
Davis, Malvern (accepted)	975 0 0

For extensive alterations and additions to St. Matthew's Church, Bayswater. Messrs. Francis, architects:—

Hopkins and Roberts	£1,245 0 0
Keyes and Stead	1,210 0 0

To the Limehouse Board for sewering in Salmon-lane:—

Mr. Gomme	£426 0 0
Deards	350 0 0
Pound	339 0 0
Ennor	329 0 0
Dethick	327 0 0
Cole	324 0 0
Murray	322 0 0
Wood and Son (accepted)	318 0 0

For the painting, &c. to be done at All Saints' Church, Skinner-street, Bishopsgate-street. Mr. C. Bailey, architect:—

Cook	£219 0 0!
Redruff	175 10 0
Cutler	171 10 2
Reynolds	160 0 0
Croughton	140 0 0
Young	133 0 0
Collings	130 0 0
Westacott	126 15 0
Kiddle	116 0 0
Heeps	113 0 0
Dearsley	89 17 9!

TO CORRESPONDENTS.

How to Clean Caen Stone.—I have unfortunately had Caen stone chimney-pieces erected in my house, and to clean off any dirt or black-lead which they may have put upon them, my servants have had recourse to wetted pipe-clay. This, as you may suppose, has only added to the evil; for, in addition to the dirt, a coating of pipe-clay has been given. Now, I wish to know how I can best wash off the pipe-clay (for it has hitherto defied the use of soda or washing-powder, freely applied); and when off, what is the best wash or coating that can be applied to the stone to preserve its colour, and at the same time to render it less capable of sustaining injury from dust and dirt.

CLERICUS.

T. C. C.—Mr. O.—Mrs. W.—R.—Percival Gridiron (in nine cases out of ten the motto-system is simply a delusion and a snare, affording advantages to the unscrupulous).—Mr. E.—T. L.—J. L.—M. O.—S. B.—S. B. G.—W. K. (reports of several trials of the sort will be found indexed in previous volumes).—G. G.—S. S. T.—Chloride (shall appear).—Mr J.—W. W.—H. P.—H. T. B.—S. G.—C. C.—L.—W. J.—C. G.—F. G.—D. J. H.—E. A. C.—J. A. R.—H. and Son.—F. A. M.—S. J.—G. W. (shall hear from us).—Justice.—W. O.—P. P.—D. M.—K. and H.—J. W. P. (next week).—W. B.—A Joiner.—G. J.—A Carpenter (we will inquire).—B. B. E.

"BOOKS AND ADDRESSES."—We are forced to decline pointing out books or finding addresses.

NOTICE.—All communications respecting advertisements should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the "Editor," and not to the "Publisher."

NOTICE TO SUBSCRIBERS.—A title-page in colours for the last volume may be obtained GRATIS, on personal application at the Office, by those who prefer it to that which accompanied the index in the number for Jan. 9. Covers for the volume may be obtained at the Office, price 2*s.* 6*d.* or the Publisher will bind it for 3*s.* 6*d.* The complete volume may be obtained, price 21*s.*

ADVERTISEMENTS.

BUILDING MATERIALS.—FOSTER-LANE.

PULLEN and SON are directed to SELL by TENDER, on MONDAY, the 22nd day of FEBRUARY, in one lot, the BUILDING MATERIALS of a large House and Premises, No. 1, Noble-street, Foster-lane, comprising sound brickwork, rafters, boarded and timber floors, plain and pan tiles, sashes, doors, partitions, wainscoting, lead gutters and pipes, and various fittings-up.—May be viewed, and particulars had, of PULLEN and SON, 80, Fore-street, Cripplegate, where Tenders are to be sent on or before MONDAY, FEBRUARY 22.

BUILDING MATERIALS.—Great Tower-street.

PULLEN and SON are directed to SELL by AUCTION, on the PREMISES, on TUESDAY, 23rd day of FEBRUARY, at TWELVE, in lots, all the valuable BUILDING MATERIALS and FITTINGS-UP of a large Dwelling-house, Shop, and Premises, 28, Great Tower-street, corner of Water-lane, comprising good sound brickwork, oak and fir timber in roofs and floors, plain tiles, glazed sashes, useful doors, partitions, marble chimney-pieces, sound flooring-boards, shop-fronts and shutters, lead flat gutters and pipes, and useful fixtures and fittings.—May be viewed the day previous. Catalogues had at Mr. TITE'S Offices, 17, St. Helen's-place; and of PULLEN and SON, 80, Fore-street, Cripplegate.

BUILDING MATERIALS, ALDGATE.

PULLEN and SON will SELL by AUCTION, on the PREMISES, on FRIDAY, FEBRUARY 26, at TWELVE, in lots, by order of the Hon. Commissioners of Sewers, all the valuable BUILDING MATERIALS and FITTINGS-UP of Two large Houses and Shops, No. 81, Aldgate High-street, and No. 1, Minories, comprising good sound brickwork, oak and fir timber in roofs, floors, and carcasing, plain and pan tiles, glazed sashes, useful doors, partitions, chimney-pieces, sound flooring-boards, shop-fronts, lead gutters, cisterns, and pipes, mahogany counters, desks and drawers, shelves and divisions, stoves, and other useful fixtures and fittings.—May be viewed the day previous. Catalogues had of PULLEN and SON, 80, Fore-street, Cripplegate.

NAVY-ROW BRICKFIELD, GILLINGHAM, KENT.—To CONTRACTORS, BUILDERS, and OTHERS.

MR. JOHN THOMAS will SELL by AUCTION, on THURSDAY, FEBRUARY 25, 1858, at TWELVE for ONE o'clock (by order of the Executors of the late Dr. R. W. Martin), on the PREMISES, as above, ONE MILLION BRICKS, consisting of valuable good coloured front bricks, paviors, stocks, pickings, and place, all of the superior quality for which this brickfield is now famed. The field is conveniently situated for buyers, being about one mile from Brompton, and close to the river, where the use of a commodious wharf may be obtained within a few rods of the premises. Omnibuses are continually running between Brompton and the Chatham Railway Station.—Particulars and conditions may be had of the Auctioneer, at his Offices, 147, Eastgate, Rochester; and of Messrs. THOMAS and CADDELL, Auctioneers &c. King-street, Gravesend.

TO SLATE MERCHANTS AND BUILDERS.—Bankrupt's Effects.

MR. F. CUTTEN is instructed by the Assignee of T. B. Hannaford to SELL by AUCTION, on the PREMISES, Trevalga-wharf, Ratcliff-cross, St. George's East, on THURSDAY, FEBRUARY 25, at ELEVEN o'clock, the STOCK of a SLATE MERCHANT, comprising fifteen chimney-pieces, eighty cisterns, from 25 to 170 gallons, 2,000 feet slate slabbing, 70,000 roofing-slates. Also, the utensils, including a very superior slate-cutting machine, together with 4½ tons boiler-tubing, and five casks of iron-mongery.—May be viewed, and catalogues had of the Auctioneer, 21, Coleman-street, City.—At the same time will be offered the Lease of the Premises, held for a term of twelve years at the nominal rent of 40*l.* per annum.

NOTICE.—To MAHOGANY and TIMBER MERCHANTS, CABINET-MAKERS, MACHINE-MAKERS, and OTHERS.—The next LIVERPOOL periodical AUCTION SALES, comprising cargoes of Mexican, Baywood, and other furniture WOODS, Baltic and American white woods, &c. &c. will take place on FRIDAY MORNING, the 26th of FEBRUARY, 1858, at ELEVEN o'clock precisely, in the Wood Sales Sheds, Brunswick and Toxteth Docks, Liverpool.—For catalogues and further particulars, apply to EDWARD CHALONER, Wood Broker and Measurer, No. 6, East Side, Queen's Dock, Liverpool.

SURREY, MORTLAKE, HIGH-STREET.—Beneficial Lease, Furniture, and Stock in Trade of an Ironmonger, Smith, Brazier, and Wheelwright: Capital Lathe, Kiln-plate Machine, Phaeton, &c.

MR. FRED. GODWIN will SELL by AUCTION on the PREMISES, on WEDNESDAY, the 24th, and following day, at ELEVEN for TWELVE, the Unexpired Term, about seven years, at a low rent; the Extensive BUSINESS PREMISES, established sixty years, with above Trades. The Stock comprises iron, tin, japanned metal and copper goods; furnishing iron and brass work; ranges, stoves, implements of trade, fitting plate; household furniture of the usual description; capital four-wheeled phaeton with patent axles.—May be viewed on Tuesday; and particulars and catalogues had on the Premises; of Mr. F. TRUEFITT, No. 20, Devereux-court, Temple; and of Mr. F. GODWIN, 3, Halkin-terrace, Belgrave-square, London.

CLIFT-HOUSE WORKS, BOW.—SALE of Portable Galvanized Iron Chapel, Church, Verandah, Residence, large Barn, Workshop, Cottages, Building Materials, two Steam-engines, one with boiler complete; Plant, Timber, &c.; which will be SOLD by AUCTION, by AUGUSTUS SMITH, at the above WORKS, on TUESDAY, MARCH 2nd, 1858, commencing at TWELVE for ONE o'clock.—Catalogues may be had at the Auctioneer's Offices, 33, Bucklersbury, and 255, Blackfriars-road, S.

NEW-ROAD.—Stock-in-Trade of a Stone and Marble Mason.

MESSRS. EVERSFIELD and HORNE are instructed by the executrix of the late James Wills, to SELL by AUCTION, on the PREMISES, 227, Euston-road, on WEDNESDAY, MARCH 3, at TWELVE for ONE, the remaining STOCK: comprising statuary, Sienna, vein, and other marble chimney-pieces, statuary marble tablets, and monumental urns, marble slab, and useful pieces. Well-designed monuments and headstones, marble mortars, masons' bankers, saw-tackle, hoisting jacks, packing-cases, plaster-casts, and other effects.—May be viewed two days previous, and catalogues had on the Premises; and of the Auctioneers, 40, Parliament-street, Westminster, or Coal Exchange.

CARDIGANSHIRE.—The valuable Leases and Machinery of the Esgair Mwyn Mining Company, for absolute Sale.

MESSRS. EVERSFIELD and HORNE are instructed by the Official Liquidator to SELL by AUCTION, at the AUCTION MART, in London, on TUESDAY, the 9th MARCH, at TWELVE o'clock, in One Lot, without reserve, the LEASES, held under the Crown, of the LEAD MINES known as the ESGAIR MWYN, situate in that portion of Cardiganshire so celebrated for its rich metalliferous products (the Lisburne Mines being in the immediate neighbourhood). This Mine has been most favourably reported on by mineral surveyors of eminence, and can be worked by a very moderate capital, as all the preliminary expenses have been incurred, and the delay consequent upon a new working thereby avoided. The machinery, including a new water-wheel, 36 feet in diameter, is of the most approved description, and has been erected within the last few years at a considerable outlay. In addition to the Esgair Mwyn, the Company have obtained, on favourable terms, a Crown lease of the adjoining property of Esgair Ddu, which there is every reason to believe will be found a valuable adjunct to the former.—Particulars may be obtained at the office of WILLIAM TURQUAND, Esq. the Official Liquidator, Old Jewry-chambers; of JOHN CHAPPLE, Esq. Solicitor, 19, Great Carter-lane, Doctors'-commons; at the Hafod Arms, Devil's-bridge (the landlord of which will direct parties to the property); at the Inns of Aberystwith; and of Messrs. EVERSFIELD and HORNE, Auctioneers to the Commissioners of Her Majesty's Woods and Forests, 40, Parliament-street, London.

NORWOOD.—The Valuable Freehold Site of the Central London District Schools (with or without the Materials), and including a neat and spacious Gothic Chapel, recently built, contiguous to the principal entrance of the Crystal Palace.

MESSRS. EVERSFIELD and HORNE are favoured with instructions from the Board of Management of the Central London District Schools to SELL by AUCTION, not later than early in MAY next (unless an acceptable offer by private contract be previously made), the Valuable FREEHOLD GROUND, with Double Frontage, and containing Three Acres, or thereabouts, with Buildings thereon, situate at the angle of the Upper Norwood-road, close to the Station on the Crystal Palace and West End Railway, presenting a choice site for Building operations, and the more eligible from the fact of there being a well of superior water (raised by steam-power), sufficient to supply the whole of the future tenants of the estate. On the eastern portion of the property, a capacious and well-built chapel has recently been built, with school-rooms adjacent, which may be treated for separately.—Further particulars may be obtained, and a plan of the property inspected, at the Offices of Mr. HEATH, Solicitor, 10, Basinghall-street; of Messrs. EDWARDS and SMITH, 19, Great Carter-lane, Doctors'-commons; and of Messrs. EVERSFIELD and HORNE, Auctioneers to the Commissioners of her Majesty's Woods and Forests, 40, Parliament-street, Westminster, or Coal Exchange.

Standing Timber at East Dulwich and Nunhead, near Peckham-rye, Surrey.

MR. SEARLE will SELL by AUCTION (in convenient lots), on the LANDS, situate as above, on TUESDAY, MARCH 2, 1858, at ONE o'clock, about ONE HUNDRED ELM TREES, of large dimensions and fine growth.—Catalogues may be had of THOMAS BYGRAVE, Esq. Surveyor, 46, Lincoln's-inn-fields; and of the Auctioneer, Camberwell-green, S.

BOROUGH of BRIGHTON.—The Council of the Borough of Brighton are prepared to receive applications for the Office of TOWN SURVEYOR, now vacant. The gentleman appointed will be required to undertake the direction and management of the surveying and architectural business of the Corporation, and not to be directly or indirectly engaged in any other business; to reside within the borough, and to devote the whole of his time to the service of the Corporation. Salary, 300*l.* per annum, and the services of an assistant and two clerks. Any further necessary information may be obtained on application at my Office.—Sealed applications, with testimonials, stating the age of the applicant, and endorsed, "Application for the Office of Town Surveyor," addressed to the undersigned, must be delivered at the Town-hall, Brighton, on or before MONDAY, the 1st day of MARCH, 1858.

January 29, 1858. C. SHAROOD, Town Clerk.

COVENTRY WATER-WORKS.—To PLUMBERS and OTHERS.—The Corporation of the City of Coventry, are desirous of obtaining the SERVICES of a qualified PERSON to UNDERTAKE the INSPECTION of METERS, TAPS, WATER-CLOSETS, and any apparatus connected therewith, supplied with water by the Corporation Water-Works. He must be practically acquainted with plumbing, write a fair hand, and be willing to make himself generally useful, under the direction of the City Surveyor, who will supply any further information.—Testimonials as to character and ability, accompanied by terms, in applicant's own handwriting, to be forwarded, under cover, to Mr. J. E. GREATOREX, City Surveyor, Earl-street, Coventry, on or before the 23rd of FEBRUARY, 1858.

WANTED, an IMPROVER'S PLACE, in the CARPENTERING and BUILDING LINE. Aged 18.—Address, R. F. Post-office, Hornchurch, Essex.

TO CLERKS OF WORKS.

WANTED, an experienced and thoroughly practical Man, of good address, and unexceptionable character. He must be thoroughly acquainted with the building trade, in all its branches, and fully competent to take the entire management of extensive building operations.—Address, stating age, salary expected, and where last engaged, to F. W. Office of "The Builder."

HOUSE SMITH.—WANTED, by a Young Man, aged 18, a SITUATION in the above line. Understands the trade in all its branches. No objection to article himself.—Address, A. M. 27, Gloucester-street, Queen-square, Holborn.

WANTED, in a Builder's Office, a respectable CLERK, to take charge of the works. He must be a neat and correct draughtsman.—Apply to Messrs. J. and M. GOGGS, Swaffham, Norfolk, stating salary, testimonials, &c.

GUNPOWDER MILLS.

WANTED, an experienced FOREMAN. A liberal and increasing salary given.—Apply, in the first instance by letter, to K. M. 89, Chancery-lane, London, and state age, the works in which last engaged, and whether as foreman or otherwise.

WANTED, a PERSON with a general knowledge of the Building Trade, who can keep accounts, measure up work, take out quantities, and assist in making plans and estimates. None need apply who are not strictly honest, sober, steady, and of persevering habits. Wages 1*l.* 10*s.* per week.—Apply to W. BALLEND, Builder, Leamington.

WANTED, a CLERK, in a Builder's Office. Apply, by paid letter, to Mr. FALKNER, 62, St. Martin's-le-Grand.

W. R. CORSON, Architect, has a VACANCY for an ARTICLED PUPIL, or an IMPROVER.—20, Cooper-street, Manchester.

TO POLISHERS ON SLATE.

WANTED, immediately, TWO good POLISHERS, who can be well recommended for steadiness and ability.—Apply to the Llangollen Slab and Slate Company (Limited), 4 Wharf, South Wharf-road, Paddington, W.

WANTED immediately, a person thoroughly accustomed to and acquainted with RAILWAY WORKS, especially tunnels, who would be fully capable of taking the management for the principal contractor, of a length of about ten miles of railway in the north of Spain. He must be an active and perfectly steady man, with the most unexceptionable character, and his age not to exceed 40 years. The salary will be liberal to an efficient person.—Apply by letter only, stating terms, and with all particulars, to JOHN LIVESEY, Esq. 47, Parliament-street, S.W.

TO PAINTERS AND DECORATORS.

WANTED, a SUPERIOR MAN for the country, fully competent to superintend and entirely manage the PAINTING and DECORATIVE BRANCHES, in connection with a first-class Upholstery and Cabinet Business. None need apply but a practical man, who has been accustomed to first-class decorations, and well versed in the various styles.—Address, with reference as to experience, &c. "DESIGN," Messrs. Ralph Allison, and Sons, 108, Wardour-street, Soho, London.

TO BUILDERS' CLERKS.

WANTED, as an ASSISTANT in a CLERK of WORKS' OFFICE, an industrious, active, and steady person, from 20 to 30 years of age, thoroughly acquainted with builders' accounts, capable of preparing drawings, and who writes a quick and neat hand.—Hours of business from Six to Six.—The highest testimonials will be required.—Terms of salary to be named.—Address (by post) to Messrs. SAML. ALLSOPP and SONS, Burton-on-Trent.

TO BUILDERS, PLUMBERS, &c.

WANTED, by an experienced PLUMBER, a PERMANENCY, or to take the Management of a Business, or as Foreman of Plumbers, or to do the general Repairs of an Estate. Conversant with accounts.—Address, S. H. care of Mr. Child, 33, Bucklersbury, London.

WANTED, by a Young Man, aged 20 (son of a surveyor), a SITUATION in a Surveyor's Office as CLERK, or in a Builder's Office as Clerk, Time, or Storekeeper; and being desirous of improvement, would fill up his time at the bench.—Address, M. A. Post-office, Kingsland-crescent, N.E.

WANTED, by a Young Man, constant EMPLOYMENT as PAPER-HANGER, PAINTER, and GLAZIER. Can turn his hand to plumbing, or as glass-cutter in a warehouse. Wages required, if constant, 24*s.*—Address, W. L. 34, Parker's-row, Dockhead.

TO BUILDERS, PLUMBERS, AND GASFITTERS.

WANTED, a SITUATION, as THREE-BRANCH HAND, where constant employment can be given. Is a good gasfitter.—Address, W. H. T. 12, Lloyd's-place, Brompton, S.W.

TO GRAINERS, WRITERS, &c.

WANTED, for the Country, a good GRAINER and WRITER. Constant employment.—Address, stating terms, &c. to R. D. 11, Clarence-road, Kentish-town, London.

WANTED, by the Advertiser, a SITUATION as PLUMBER, PAINTER, and GLAZIER. Understands paper-hanging and general repairs. Would undertake a situation to look after an estate, or conduct a business, or as working foreman.—Address, A. B. Star Coffee-house, Islington-green.

TO PLUMBERS, &c.

WANTED, by a Young Man, a SITUATION as PLUMBER, PAINTER, and GLAZIER. Fill up his time at gas-fitting, &c.—Direct, J. F. W. 2, Byron-street, Blandford-square, N.W.

WANTED, a SITUATION, for a Youth. Has been engaged in builders' and surveyors' offices about four years, can square dimensions, and trace drawings.—Address, J. S. 22, Clarence-road North, Kentish-town.

WANTED, a SITUATION, by a CARPENTER and JOINER, of experience, as SHOP or WALKING FOREMAN, or to Manage a Jobbing Business. The neighbourhood or suburbs round London preferred. First-class references as to ability, sobriety, respectability, &c. Salary not a primary consideration.—Address, C. T. M. Mr. Dewdney, London-road, Reigate, Surrey.

TO BUILDERS.

WANTED, by the Advertiser, a SITUATION as STAIRCASE HAND, or superintending windows and lapping the same, together with best joiners' work. Good reference can be given.—Address, by letter, pre-paid, A. G. No. 5, Matilda-street, Caledonian-road, Islington, N.

TO PAPER-STAINERS, DECORATORS, AND OTHERS.

WANTED, by a respectable and experienced Man, a SITUATION as SALESMAN, WAREHOUSEMAN, or FOREMAN of PAPER-HANGERS. Has a thorough practical knowledge of French and English decorations, also making plans and estimates for the same.—Address, post-paid, H. L. H. Office of "The Builder." No objection to the country.

TO MASTER PAINTERS AND BUILDERS.

WANTED, by a Young Man, CONSTANT EMPLOYMENT as PLUMBER, PAINTER, and GLAZIER.—Direct, S. T. No. 10, Tucker's-rents, Ossulston-street, Somers-town.

TO CARPENTERS AND JOINERS.

WANTED, to PLACE an Orphan Lad, 15 years of age, as IN-DOOR APPRENTICE. He has worked with his late father eighteen months, and is very useful. A premium of 10*l.* will be given by instalments in the first year. References will be given and required.—Address, A. B. 31, Leadenhall-street, E.C.

TO CARPENTERS.

WANTED, by a Young Man, aged 19, a SITUATION as IMPROVER. Has been for the last three years in a carpenter's shop. Wages low.—J. D. 56, Queen-street, Edgeware-road.

TO CARPENTERS, JOINERS, &c.

WANTED, by a Steady, Active Young Man, a SITUATION as FOREMAN, or otherwise, in a Jobbing Shop.—Address, A. B. C. No. 11, King-street, King's-road, Chelsea, London, S.W.

TO BUILDERS, CONTRACTORS, &c.

WANTED, by an experienced Young Man, a RE-ENGAGEMENT as OUT-DOOR or GENERAL FOREMAN. Can give three years' reference from last employers. Wages moderate.—Address, K. D. Office of "The Builder."

WANTED, by the Advertiser, a SITUATION as SHOP or WALKING FOREMAN, or to superintend mechanics on an estate, or any similar situation where trust and confidence are required. References unexceptionable.—Address, A. B. Post-office, 50, Amwell-street, Pentonville, E.C.

TO ARCHITECTS, &c.

WANTED, a RE-ENGAGEMENT, by an experienced ASSISTANT. Is a first-rate draughtsman, and thoroughly acquainted with details, construction, fittings, &c. The advertiser having had great experience in building matters, would be found very useful to an architect of general practice. Terms moderate.—Address, ARCHITECT, 1, Middle-row, Holborn.

TO BUILDERS AND CONTRACTORS.

WANTED, by the Advertiser, a RE-ENGAGEMENT as GENERAL or OUTDOOR FOREMAN. He has a perfect knowledge of the building trade in all its branches, and has had good experience in ground work, pile-driving, drainage, &c. having just completed an extensive waterside job. Would have no objection to take a large job of carpenter's work, brickwork, or ground work,—labour only. Testimonials unexceptionable.—Address, HUGH H. FACEY, 19, Clayton-street, Caledonian-road.

TO GLASS-STAINERS, &c.

THE Advertiser is desirous of meeting with an ENGAGEMENT, as FOREMAN, in the above line, or as a PRACTICAL GLASS-STAINER. The advertiser thoroughly understands the art in all its branches, having been engaged for the last ten years in new and old work. Good references can be given.—Address, S. T. B. 19, Crescent, Cambridge.

TO BUILDERS AND CONTRACTORS.

THE Advertiser is open to an ENGAGEMENT as FOREMAN, to superintend Painters' and Glaziers' work. Accustomed to bookkeeping.—Apply to W. S. 33, Paddington-street, Portman-square.

THE Advertiser, who has served his articles with an architect of extensive business, is a neat draughtsman, and understands the usual routine of an office, is desirous of an ENGAGEMENT at a moderate salary. Would not object to go abroad into a warm climate.—Address, A. B. 1, Crown-court, Cheapside, London.

TO ARCHITECTS AND SURVEYORS.

THE Advertiser, who possesses a thorough knowledge of land surveying, and the ordinary routine of an Architect's Office, is open to an ENGAGEMENT. First-class testimonials can be given.—Apply to R. T. B. care of Mr. Dunningham, 8, Seymour-street, Euston-square, London, N.W.

TO BUILDERS.

EMPLOYMENT WANTED, in a Builder's Office, as CLERK of WORKS, or to take charge of a small business, by an active middle-aged Man, who has a thorough practical knowledge of building in all its branches: can take out quantities, estimate, measure up and value works, fixtures, and dilapidations, and wishes to make himself useful. Unexceptionable references for integrity and ability. Salary moderate. No objection to the country.—Address, pre-paid, to J. C. care of Mr. Clarke, 10, Norfolk-street, Middlesex Hospital.

A YOUNG MAN, aged 32, desires a SITUATION in the COUNTRY. He is a fair and neat draughtsman, understands land and building, surveying, levelling, &c. Also has had experience in the drainage of land, and the repairing and erection of farm buildings. Salary moderate.—Address, FIDELIA, Francies House, Highgate, London.

TO CIVIL ENGINEERS AND SURVEYORS.

AN Assistant Engineer is desirous of an ENGAGEMENT in either of the above offices, either temporary or permanent. Is capable of undertaking or superintending important works. High testimonials. Salary moderate.—Address, E. J. 2, Caroline-street, Bedford-square.

TO MASTER PAINTERS, DECORATORS, &c.

A RESPECTABLE, steady Young Man is desirous of obtaining an immediate SITUATION as GRAINER, WRITER, &c. Would fill up time with Painting, Glazing, &c.—Address, stating terms, A. B. 13, Malvern-place, near Railway station, Hounslow, Middlesex.

TO ARCHITECTS AND SURVEYORS.

AN ASSISTANT, fully qualified both as a Draughtsman and Surveyor, is open to an immediate ENGAGEMENT, partial or permanent.—Address, X. Y. Z. Mr. Stoper's, No. 47, Holborn-hill, E.C.

AN Architect in a Cathedral City, whose returns for the last seven years have averaged from 800*l.* to 900*l.* per annum, is desirous of DISPOSING of his PRACTICE. He has no objection to allow his name to remain in conjunction with his successor's for twelve months, to enable him to secure some public appointments he holds. Goodwill 600*l.*—For particulars, stating real name and address, apply, by letter only, to MASONIC, care of Mr. Thos. Newcombe, 114, Mount-street, Grosvenor-square, London.

AN ARCHITECT and SURVEYOR, in extensive practice in London, has a VACANCY for a PUPIL, also for a Youth capable of making tracings and desirous of improvement.—Address, R. M. Office of "The Builder."

TO MECHANICAL BUILDERS.

A YOUNG GENTLEMAN, aged 23, is desirous of PLACING HIMSELF with a thorough practical ENGINEER, with a view of eventually entering upon, or becoming Partner. The Advertiser is naturally fond of mechanics, having a complete workshop of his own. Reference given and required, of the highest respectability.—Address, X. Y. Z. Post-office, Dunstable.

TO ARCHITECTS AND SURVEYORS.

A GOOD DRAUGHTSMAN, who understands working Finished and Perspective Drawings, and has a knowledge of Levelling and Surveying, wishes for an ENGAGEMENT in an Architect and Surveyor's Office, where he will have an opportunity of improving himself.—Address, A. B. 17, Bucklersbury, City, E.C.

AN ARCHITECTURAL ASSISTANT, of energetic abilities, from an eminent office, requires an ENGAGEMENT of confidence. He is versed in the Pointed styles, finished and perspective drawing, sketching, and good at details. Understands surveying and general routine of office and practice.—Address, IOTA, Office of "The Builder."